Edition 13

Gerda Stetter Stiftung

Technik *macht* Spaß!

Annual Report 2025

Our motto for this year:

“I´ve never tried that before,
so I'm absolutely sure I can do it.“

(Pippi Longstocking – Astrid Lindgren)

Shaping the Future by Embracing the New!

Courage is a decisive strength in times of change. The world is facing major technological, ecological, and societal challenges. Climate change, resource scarcity, and digital transformation require all of us to break new ground – even when there are no ready-made solutions yet. This very idea lies at the heart of our foundation's work: trying out new approaches, sharing experiences, and shaping progress together. With our foundation, we want to encourage children, young people, and adults not only to consume technology, but to actively help shape it.

Education in the STEM subjects (Science, Technology, Engineering, Mathematics) is a key tool in this effort. We are committed to ensuring that learning remains hands-on, creative, and easy to understand – and that enthusiasm for technology is always linked to social responsibility. Following the great success of our initiative "Saving the Digital Future," through which we inspired 100,000 children and young people with future technologies, we are now focusing on a new central topic: the connection between technology and sustainability. Under the title "CirQmind – Circular Economy through Circular Society," we support projects that understand the Circular Economy as a holistic societal approach. Because true sustainability can only succeed if people also become part of the cycle – by continuously reapplying knowledge, resources, and skills.

Our vision of a Circular Society is based on four pillars: Recycle, Rebuild, Reuse, and Reskill. They describe the path from recycling materials to the creative redesign of products and on to the sharing of knowledge. The aim is to combine ecological responsibility with technological innovation. One example is the PlastiX project, which was launched in 2019 during the SMART GREEN ISLAND MAKEATHON on Gran Canaria. Students developed ideas on how drones and AI could be used to detect, collect, and process plastic waste. Today, the project is being continued – from recycling and material processing through to rebuilding new products. In the process, new materials are created, such as filaments for 3D printing, which can in turn be used in educational initiatives like EduDemoS. The EU-funded project EduDemoS enables schools, vocational schools, and universities to produce Educational Demonstrators themselves from recycled material and use them in teaching.

In this way, sustainability and technological education are practically linked. Children, young people, and students learn how circular thinking works – and that innovation also means responsibility. As with our innovation festival SMART GREEN ISLAND MAKEATHON, where since 2016 people of all generations have come together every year, here too we rely on learning together and passing knowledge on. Enthusiasm, knowledge, and ideas are meant to multiply – entirely in the spirit of a vibrant Circular Society. As a foundation, we want to bring people together, promote education, and initiate change. We are convinced: courage, creativity, and collaboration are the decisive factors in overcoming the challenges of the future. If we dare to innovate, sustainable progress can follow – delivering benefits for the economy, the environment, and society.
Be part of it!

Rainer Stetter

Dr.-Ing. Rainer Stetter
Founder & Board Member

The Foundation Members

The Managing Board:

"To be an entrepreneur also means assuming social responsibility. With our foundation, we want to push the technological education of children, students, and refugees with playful projects. After all, "childlike" curiosity and a freely lived play instinct form the basis for constant renewal and innovation."

Dr.-Ing. Rainer Stetter, CEO and the Foundation Founder, ITQ

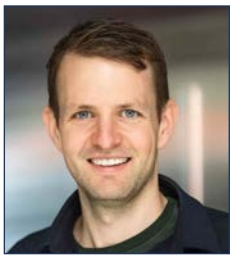
"With our comprehensive, modular training concept, we want to counteract the shortage of digital specialists at an early stage and thus sustainably promote and train young technical talent. And we want to do this in a fun, joyful, and enthusiastic way at all levels, because that's the greatest motivation for sustainable learning."

Sandra Stetter, Head of Business Administration, ITQ

The Foundation Board:

"Contributing to the earliest possible practice-oriented training is my personal motivation. By teaching technology in a playful way, we can simultaneously contribute to improving the image of technical professions."

Andreas Baumüller, CEO, Baumüller



"By supporting schools and competition venues, the foundation has provided valuable impetus. I am particularly excited about the idea of robotics student coaches, and I look forward to further expanding this mentoring support from universities and businesses for schools in the future."

Markus Fleige, TECHNIK BEGEISTERT e.V.

The Foundation Board:

"Companies have to take responsibility for training the next generation of employees. Getting young people excited about technology is the basis for this. Industry-related projects with universities and colleges of all kinds are suitable for bringing industry and training closer together."
Paul Kho, Freelance Journalist

"Our motivation is to inspire enthusiasm for science and technology. For me, bringing children closer to this in a playful and natural way, using modern and tangible learning methods, means thinking and acting in an entrepreneurial, future-oriented way. Just do it!“
Martina Manich, Managing Director, team::mt

"Digital transformation has a huge impact on engineering education. Only with new innovative teaching concepts can we keep up with the rapid development of new technologies. By simultaneously teaching practice-oriented and character-building competences with attractive formats, we can inspire students to study and prepare them for the demands of the working world.“
Prof. Dr. Peter Eichinger, University of Applied Sciences Aalen

"With the Hacker School, we make an important contribution to the digital education of our youth by inspiring them for the world of programming languages. We do this in cooperation with companies from the IT sector and our extensive network, including the Gerda Stetter Foundation. In doing so, we are committed to social responsibility and democratic values.“
Dr. Julia Freudenberg, Managing Director, Hacker School

Impressions of our Network

Voices:

"Our apprentices and students were thrilled by the Festival of the Future. In line with the Snowball Effect, they were able to be trained as technology coaches and thus pass on their knowledge to the younger generation. Experiences like these spark curiosity even in the very youngest, make technology tangible, and show how vibrant learning can be. We welcome every format that brings future topics closer to young people and motivates them to contribute their own ideas. My sincere thanks go to the Gerda Stetter Foundation – Technology is fun! – for enabling our participation and for its strong commitment to supporting young talent."

Martina Brunner
Head of Training
BRUNATA-METRONA GmbH & Co. KG

"What particularly appeals to me about the Gerda Stetter Foundation's MAKEATHON is how closely its challenges are tied to industry and business. At the same time, a transfer of know-how takes place, as the students are supported by dedicated representatives from companies and universities. The competition also promotes teamwork among the students to a special extent. I was very impressed by the students' palpable enthusiasm. The results achieved – new business ideas or product solutions – underscore the high added value and demonstrate the great importance of such practice-oriented formats. In my opinion, the MAKEATHON promotes the transfer between theory and practice, the willingness to experiment, and the innovative capacity of students in a particularly strong way."

Prof. Dr.-Ing. Martin Renner
Energy and Building Technology
Munich University of Applied Sciences

"In our successful cooperation with the Gerda Stetter Foundation, we work together to foster enthusiasm for STEM among school students. The foundation impresses with its especially innovative ideas in the STEM field, rethinking technical education. A highlight of our collaboration: our joint appearances at automatica and electronica with forward-looking programming workshops that inspire young people through hands-on experiences. The goal is to encourage young people to solve given tasks independently through programming and thus develop their potential. Many thanks for the excellent cooperation."

Lukas Badura
MINT Network
Texas Instruments
Deutschland GmbH

"The Didacta Association are very pleased to work together with the Gerda Stetter Foundation and WorldSkills Germany to teach learners from schools and vocational schools technical understanding and to spark their enthusiasm for sustainable technical career fields. As part of the didacta education fair, we jointly designed and conducted training camps and workshops. In this way, we were able to efficiently use our synergies to inspire young people to pursue technical professions – something that will remain important in the future, especially in times of skilled labor shortages."

Dinah Korb
Managing Director
Didacta Exhibition and
Publishing Company mbH

Voices:

"The SMART GREEN ISLAND MAKEATHONS repeatedly show how powerfully shared thinking can inspire. H2BX promotes knowledge and exchange around hydrogen technologies – for a sustainable energy transition. One focus is on the participation of students from Bremerhaven University of Applied Sciences in the MAKEATHON on Gran Canaria, where collaboration with other universities and industry is a major benefit o f t he e vent. S haring k nowledge a nd l earning f rom one another knows no boundaries there, and in doing so creates genuine shared growth for the future. Through its work, H2BX aims to support the foundation in sparking interest and enthusiasm for innovation among young people."

H2BX
Die Wasserstofflotsen.

Claas Schott
H2BX Chairman
Hydrogen for the
Region Bremerhaven e.V.

"Working with the Gerda Stetter Foundation – Technology is fun! has shown me how vibrant the communication of technology can be. Together, we have found ways to implement exciting projects that inspire people of all ages and make technical topics tangible. I was particularly impressed by how actively participants are involved and experience technology as an opportunity for their future. I look forward to continuing this path together."

FH Salzburg

DI (FH) DI Simon Kranzer
Senior Lecturer – Senior Researcher
Information Tech. & Digitalisation
Salzburg University
of Applied Sciences

"Digital basic education is promoted at our school just as much as what is known as advanced support for our technology-interested students. Thanks to the Gerda Stetter Foundation, our students have finally been given an opportunity for their thirst for knowledge about technology to be acknowledged and supported. They gain valuable insights into the fundamentals of mechanics, the use of IT-controlled systems, and in doing so sharpen their own career profile. Thanks to the EduDemoS workshops and the corresponding professional development opportunities for my colleagues, digital teaching is also being further developed in a targeted way in the spirit of a school of the future. Our collaboration with the foundation means a great deal to us, and we are grateful for this beneficial connection."

EDUDEMOS

Dr. Beate Lammert
Subject Coordinator for
Digital School Development
at the Municipal Vocational School
for Career Integration Munich

"If the activities and training projects of the Gerda Stetter Foundation – Technology is fun! and the foundation itself did not already exist, they would have to be invented! Thinking and living Digital Education together is part of this foundation's DNA. The Gerda Stetter Foundation's work directly at the grassroots level inspires participants across all stages of education. The educational biographies of many participants after such events show how sustainable and impactful their work is."

newautomation

Hubert Romer
Head of the Office
New Automation e.V.

Our Education Concept

Modular Education Concept

Getting young people excited about technology is the basis for ensuring a qualified future workforce in German companies. Technical knowledge should be taught in a way that makes it fun for young people to discover technology.

The Gerda Stetter Foundation has set the goal for a modular training concept. We want to get children and young people excited about technical projects and thus help shape the technology of tomorrow in a smart and green way.

The focus of our activities is the handling of technical knowledge as well as the practice on technical projects. With this we already start at kindergarten age with our Technology Workshops in a very playful way. Our LEGO Mindstorms projects, which teach initial programming skills, are designed to get as many young people as possible excited about science and technology at an early age.

Furthermore, they serve to reduce the fear of complex technology. The pupils are coached by university students and build autonomous robots consisting of sensors, motors, and lots of colourful LEGO bricks as part of the project. The foundation operates according to the top-down principle, i.e., students supervise projects in which they pass on their knowledge to pupils. Consequently, elementary school children are guided by the pupils who have been trained in a LEGO Team.

Management	Engineers	Students
		
■ Basics and importance of systems engineering ■ Understanding of mechatronical projects and processes	■ Improve knowledge about interdisciplinary work ■ Enhance the use of software	■ Soft skills and experience in project management ■ Increased understanding of software

Another important point is better dovetailing, as the networking of disciplines and know-how will play an increasingly important role in the future.

Since the company was founded, we have maintained a comprehensive and cross-industry as well as international network consisting of leading industrial companies, partners, schools, and universities.

We are very involved in research and education and are pleased to have many successful collaborations and research projects with German and international companies as well as universities. By combining cross-departmental lecture concepts with practical team semester work in the industry, students learn to work independently, gain efficient project management skills as well as interdisciplinary knowledge and how to acquire important soft skills. In addition, we place great emphasis on promoting innovative capability and creativity and have therefore been organizing our MAKEATHONS at national and international level since 2016.

The name "MAKEATHON" forms a pun from "MAKE" and "MARATHON" and is an innovative & creative educational event, where several teams consisting of young talents develop innovative prototypes as well as technological concepts in an agile and interdisciplinary way in a very short time.

Thus, we bring together companies, universities and students who enjoy the fun of designing, constructing, and programming as a common denominator.

Trainees	Pupils	Children
		
■ Foster fascination for technology ■ Practical professional training	■ Understand cause-effect relationships ■ Promote team work and independent thinking	■ Learning with fun and fascination for technology ■ First experience with mechatronics

Digital Education – Technology Workshops

Technology Workshops – Getting tomorrow's Youth excited about Technology

How do you get young people excited about technology?

That's a question, many companies have to deal with these days. To get our young people excited about science and future technologies in a playful way as early as possible, we have been offering numerous innovative Technology Workshops for children and young people for many years.

We are particularly committed to promoting the technical education of girls. With our workshops, we want to help children and young people overcome their fear of complex technology. Whether it's a smartphone or a game console, technology is now part of many everyday objects that children and young people are confronted with at a very early age.

In addition, the speed of technological change continues to increase. This makes it even more urgent to have experts who research, develop and are informed about future technologies. Our Technology Workshops help children and students of all ages learn basic technical skills that will be required in their future careers, using do-it-yourself mini robots, LEGO Education, woodturning and soldering stations.

BENEFITS
How to benefit from our workshops

- Early promotion of young talents
- Learn technology interactively, and playfully
- Use of various technologies
- Networking with schools, universities, institutions, and companies
- Practice-oriented and innovative learning concepts
- Teaching technology to children and young people
- Know-how and knowledge transfer
- First introduction to high-tech
- Coaching and support

TECHNOLOGY WORKSHOPS OVERVIEW
We teach technology with a lot of fun!

Getting young people, and girls in particular, enthusiastic about technology is the basis for securing qualified young people in German companies. Technical knowledge should be prepared in such a way that young people have fun discovering technology for themselves.

- **300 Workshops**
- **With over 8500 Participants**
- **In 3 Countries**
- **With 110 Schools, Institutions**
- **20 Trade Shows**
- **With 25 Companies**

Securing the next generation of the future with the right Technology Workshops!

Playfully learning Technology

We focus on creativity and fun in dealing with technology. Children and students are presented with technical challenges in a playful manner and learn to develop solutions independently. This process contributes to lifelong learning, as this enthusiasm for technology is stimulated from an early age and maintained into adulthood.

Since 2011, we have been awakening the interest for technical projects of children and young people of all ages in kindergartens, schools, or educational institutions worldwide with our Technology Workshops. With our Cleaning Robot, we succeed in motivating even the very young ones. In this kit, a robot is assembled by the children, from the wiring to the mechanics, and then moves across the floor driven by an unbalance. With the help of our specially trained technology coaches, we can reach a wide range of young people with simple technical means and encourage them to tinker, develop and program.

Our training concept is based on cooperation with various German universities. In recent years, we have trained more than 800 students as technology coaches. These in turn have been able to teach more than 8500 children about technology in a playful way in workshops, at trade fairs or in schools.

TECHNOLOGY WORKSHOP HIGHLIGHTS

MUNICH

INGOLSTADT

DUISBURG

NUREMBERG

REGENSBURG

BERLIN

LANDSHUT

SPAIN

CHINA

Digital Education – LEGO Workshops

LEGO Workshops – Playfully learning Technology

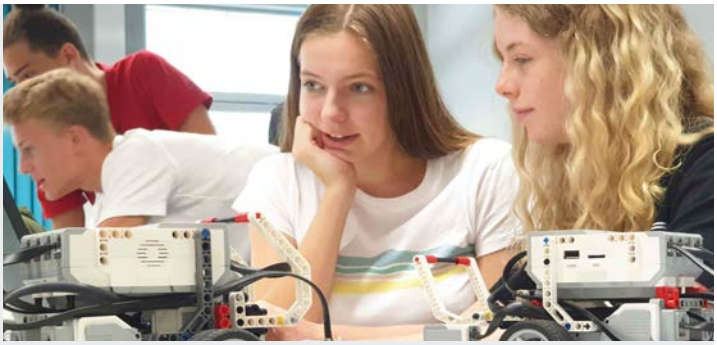
When it comes to promoting key skills for the 21st century, we offer versatile Technology Workshops with our LEGO Education training concepts. Whether for schools, educational institutions, training centers, universities or for introducing adults and companies to technologies – with LEGO Mindstorms EV3 or LEGO WeDo Education, programming as well as future technologies can be taught in a playful way.

Almost everyone knows the colourful LEGO building blocks as toys, but the small bricks also have great potential for education. With our Technology Workshops, we can use the action-oriented learning concepts of LEGO Education to teach schoolchildren and students of all ages basic technical contexts that will be required in their future careers. With practical teaching concepts, learners are encouraged to think for themselves and work creatively on innovative solutions.

By experimenting and trying things out for themselves, children and young people learn to grasp complex topics, to question them critically and to develop their own creative ideas and approaches to solutions. In education and training, the learning system is also suitable for modeling, analyzing and programming industrial processes.

BENEFITS
How you benefit from our cooperation

- Training of qualified future employees
- Learning programming skills
- Use of future technologies
- Networking with schools, universities, institutions, and companies
- Practice-oriented and innovative learning concepts
- Teaching technology to children and young people
- Know-how and knowledge transfer
- First introduction to high-tech
- Coaching and support



LEGO WORKSHOPS OVERVIEW
We teach technology with a lot of fun!

Getting young people, and girls in particular, enthusiastic about technology is the basis for securing qualified young people in German companies. The transfer of technical knowledge should be prepared in such a way that young people have fun discovering technology for themselves.

550 Workshops
With over 15590 Participants
In 5 Countries
With 300 Schools, Universities
50 Competitions
With 50 Companies

With our innovative education concepts, we secure the young talents of the future!

Innovation through Education 4.0

With our LEGO Education learning concept, we inspire not only children and young people, but also specifically girls for technical projects worldwide. Our education concept is based on the well-proven top-down principle, in which young students are guided and trained by our ITQ LEGO Coaches. In addition to technical content, the program includes soft skills for dealing with children and young pupils.

The pupils, who are coached by students, assemble robots with sensors, motors and many colourful LEGO bricks in our LEGO Mindstorms Workshops. To help us spread our approaches even further, we developed the concept of student LEGO Coaches for pupils initially at the Technical University of Munich and since then we have established it at several other universities. In the context of soft skills events, we offer students the opportunity to learn and apply necessary soft skills using a real interdisciplinary development task as an example. To further deepen these skills, students coach pupils towards a robotics competition.

This approach, which we want to introduce to as many other colleges and universities as possible, brings us closer to our goal of providing schools with a broad supply of motivated coaches.

LEGO WORKSHOP HIGHLIGHTS

MUNICH

DUISBURG

NUREMBERG

HEIDENHEIM

AUGSBURG

CHINA

SPAIN

URUGUAY

USA

Digital Education – MAKEATHONS

MAKEATHONS – Securing our Future with Innovation Festivals

Innovative minds secure the future of companies – but how do you find them? In particular, skilled workers who bring knowledge from the fields of IoT, Robotics, Artificial Intelligence, Smart Automation, Smart Mobility or Smart Green Energy are in demand.

That's why we organize Innovation festivals (MAKEATHONS) with the aim of training Young Talents to become innovative and creative professionals and bringing them into direct contact with companies to develop creative, technical projects together. The name "MAKEATHON" forms a pun from "MAKE" and "MARATHON" and is an innovative & creative educational event, where Young Talents (students, trainees, and apprentices), consisting of several teams, create and develop innovative prototypes as well as technological concepts in an agile and interdisciplinary way in a very short time.

The practical requirements (Industry Challenges) often come from companies that want to develop a suitable software or hardware solution for their own problem.

We bring together companies, universities and students who have as a common denominator the fun of designing, constructing, and programming. The results are remarkable, and it always amazes us how quickly the Young Talents turn their creative ideas into reality.

BENEFITS
How you benefit from our cooperation

- Development of new innovative ideas and concepts
- Recruiting of qualified Young Talents
- Establishment of technology cooperations
- Elaboration of your Industry Challenge
- Initiation of new business models
- Knowledge and know-how transfer
- Networking with companies, universities, and students
- Part of a national and international innovation community

MAKEATHONS OVERVIEW
We "MAKE" on a national und international level

We have already shown it many times, what new ideas for a digital future can look like or how recruiting talented developers in the competition for talented professionals can work.

55 MAKEATHONS — **With over 5600 Participants**

In 6 Countries — **With 380 Universities**

Over 1350 Ideas — **1550 developed Prototypes**

Be part of our innovative MAKEATHON Community!

Innovation through Education 4.0

There is a lot of talk these days about Education 4.0 and innovation. However, there is usually more talk than action, which is why we have been working for years on developing new concepts and formats to promote Young Talents and bring them into contact with companies.

Our idea to organize a MAKEATHON was born in 2016 in Munich, where it immediately proved to be an excellent educational concept. Since then, we have been constantly developing the event and it has already taken place in many other countries. By now, we connect companies, industry associations, universities, institutions, and schools not only in Germany, but worldwide.

Due to Corona, we had to initiate new ways and flexibly adapt our concepts in spring 2020. As a result, we were able to host our first Hybrid MAKEATHON at the end of June 2020, just a few weeks after the first easing of the lockdown. This new format digitally connects small, locally operating teams via the "network" and thus makes it possible to react quickly and flexibly to external conditions.

The organisation of the Packaging Valley Makeathon in 2020 with completely new partners from industry, associations and universities and a total of almost 100 people after less than five weeks of preparation is proof of this.

MAKEATHON HIGHLIGHTS

GRAN CANARIA

BOTSWANA

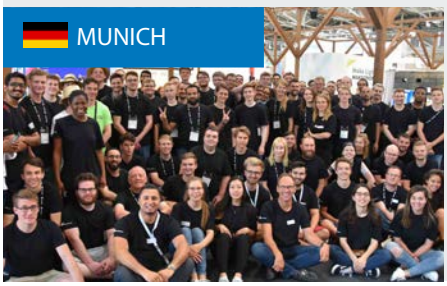
TUNISIA

ITALY

COLUMBIA

CHINA

MUNICH



SALAMANCA

NUREMBERG

Smart & Green – Our Vision

An Island as Demonstrator

The world is undergoing a massive upheaval. Technological, social, and climatic conditions are changing at at an ever-increasing pace. A virus has highlighted the fragility of our system. Entire industrial sectors, such as the pharmaceutical industry, but also the automotive industry, are changing with incredible speed. Climate change seems to be accelerating more and more, with hot weather periods, with temperatures above 40 degrees Celsius and alternating with severe storms.

Although there are many discussions, talks and protests, responsibilities are usually only shifted back and forth. Determined and joint activities, however, do not emerge. To counter this perceived self-paralysis, we launched the "Smart Green Island" project at the end of 2016.

Within this project, we want to work together with motivated minds from different disciplines, generations, and nations to develop technically smart concepts and solutions to demonstrate how a (green) life in harmony with nature is possible. Our vision is to demonstrate, using the Island of Gran Canaria as an example, how a closed loop between energy production and usage can be created in a smart way while at the same time preserving the existing natural resources.

However, with this project, we do not only want to show how energy can be used in an intelligent way. In fact, almost all areas of daily life need to be addressed to provide a comprehensive picture of how life and work can take place in harmony with people and nature.

The needs of the world' s countries in terms of environmentally compatible living are very different due to different economic and climatic constraints. In order to be able to run through as many different scenarios as possible in a geographically compact and thus resource-efficient manner, Gran Canaria was chosen. This almost round island with a radius of about 45 km is practically a continent in miniature due to its unique geographical location with a total of 14 climate zones. On this island, both sub-tropical and desert-like conditions as well as scenarios in an urban or rural environment can be played out simultaneously.

Digitalization and Sustainability

Gran Canaria's proximity to Africa and its location in the Atlantic means that solar and wind energy is available in almost unlimited quantities. This energy could be used to desalinate water, which is needed for daily life and agriculture. At the same time, sustainable living and emission-free mobility could be realized. Furthermore, the intelligent and digital connection of the different areas can open up further ecological and economic opportunities.

To put these goals into action, we have been organizing our SMART GREEN ISLAND MAKEATHONS on Gran Canaria since 2016. Through these events, we can build a global network of motivated individuals. At these innovation festivals, several hundred students from different universities around the world, as well as numerous national and international sponsoring partners from industry, come together on Gran Canaria. For four days, students work together with companies on climate-friendly technologies and develop first innovative prototypes. Eight of these Innovation Festivals have been held since 2016, with a total of more than 3000 participants from over 50 countries and 220 universities.

Complementing the MAKEATHONS, other "Smart & Green" projects have been carried out on the island to deepen and expand the knowledge gained from the events. For example, in previous years students were able to develop climate-friendly projects, such as the PlastiX project, during the Smart Green Summer Camps. In addition, students can make optimizations as well as further developments to the existing prototype during long-standing projects, such as the Bamboo Solar Car – a solar-powered vehicle with a frame made of bamboo.

The Corona pandemic did not stop at live activities either and therefore, numerous events had to be cancelled or adapted and held with a changed concept. However, the ITQ Group used the months of the lockdown to develop new and innovative concepts. Together with the Rhine-Waal University of Applied Sciences and ITQ GmbH, Dr. Stetter ITQ S.L.U. is planning to set up a "Green Lab" on the island.

Young Talents will have their own location on the island to work on their green projects. This already started this summer with the interdisciplinary student project "Future Technologies for Smart Green Islands" of the Rhine-Waal University of Applied Sciences. During the seminar, students develop their first innovative and sustainable projects, which are then to be continued on Gran Canaria.

In order to advance our vision of the Smart Green Island, we want to offer our students a professional working environment on Gran Canaria. Therefore, we are looking for a suitable location on the island to get closer to our goal of developing Gran Canaria into a European demonstrator for a smart and green way of life.

Smart & Green – MAKEATHONS

SMART GREEN ISLAND MAKEATHONS – History

In September 2016, we held the first SMART GREEN ISLAND MAKEATHON with more than 40 participants, advancing future "digital" and "climate-friendly" innovations. Just 30 months later, we were able to increase this number tenfold and already attract 400 participants to our event.

Nine years later, in 2025, there were even more than 986 participants. Accordingly, the SMART GREEN ISLAND MAKEATHON has established itself as a successful, innovative, and international success model. With each additional MAKEATHON, the vision of a SMART GREEN ISLAND is realized a bit more and Gran Canaria becomes an exemplary climate-neutral island.

KEY FACTS

During our MAKEATHONS, new ideas and solutions are constantly being developed by Young Talents regarding topics such as Smart Home, Smart City, Smart Production, Robotics, AI, IoT, Smart Mobility, Smart Farming, Smart Health and Smart Green Energy.

- 8 MAKEATHONS
- Over 3000 Participants
- With 50 Nations
- With 220 Universities
- Over 270 Ideas
- 375 Prototypes

2025

SMART GREEN ISLAND MAKEATHON IMPRESSIONS

2024

2023

2020

2019

2018

2017

2016

Smart & Green – First Projects

Bamboo Solar Car: Sustainable and Innovative Mobility

During the SMART GREEN ISLAND MAKEATHON in February 2019, the idea for a new Smart & Green Innovation Project in the Smart Mobility sector was born – the Bamboo Solar Car – a solar-powered car made of bamboo.

This low-cost vehicle made from standard components and renewable and recycled parts is intended to make sustainable electromobility available to everyone. The focus here lies on countries and regions with a weaker infrastructure and many hours of sunshine, as the Bamboo Solar Car uses a solar cell on the roof to generate energy for movement. The car's frame is made entirely of bamboo tubes, which are cut and glued together using precise instructions. The flexibly sized solar panels achieve an energy output of up to four kilowatt hours.

After just one day of sunshine, the car battery is half charged, and after two days it is fully charged. In this case, the car has a range of about 30km, which can cover at a maximum speed of 40km/h.

A first prototype was already created in May 2019 during the ITQ summer event. Within only 24 hours, the ITQ team of employees succeeded in developing this first prototype. Dr. Rainer Stetter was visibly proud and delighted with the first prototype. Through the globally established network of Dr. Stetter ITQ S.L.U. with international universities and colleges, exciting follow-up projects could be realized. Consequently, 4 project teams were formed at different locations, which were digitally connected with each other.

The student teams from Germany, Gran Canaria, Tunisia, and Botswana incorporated their know how and worked energetically on the optimization. Between March and October 2019, a total of three prototypes of the Bamboo Solar Car were built.

2. Prototype, Laserworld of Photonics, June 2019

1. Prototype Bamboo Solar Car, ITQ Event May 2019

3. Prototype Bamboo Solar Car, Gran Canaria, August 2019

Solar Car Botswana and Solar Golf Car Gran Canaria

At the MAKEATHON in Botswana, the fourth prototype – the Solar Car Botswana – was developed at the end of 2019. It was a version using recycled steel tubes instead of bamboo and featuring a dust-protected body, ideal for African conditions. An interdisciplinary team from Germany imported materials such as electronics and car parts to Botswana in suitcases. On site, the German students met African student teams to continue working together on the Bamboo Solar Car.

Unfortunately, the hoped-for bamboo material was not available. On short notice, the team used old steel tubes from a recycling center and built a sturdy body out of them. In collaboration with local companies, a protective cover against sand and dust was also developed. In this way, the original Bamboo Solar Car became the first Recycling Solar Car in safari design – optimally adapted to African conditions.

Projects like these demonstrate how hands-on collaboration and creative idea generation can lead to tangible results in a short period of time. At the same time, they draw companies' attention to the innovative power of young talents and enable early networking with industry. In this spirit, the Solar Golf Car was also created – another example of sustainable smart mobility. In cooperation with a golf course on Gran Canaria, golf carts were equipped with solar cells to reduce CO_2 emissions and make golf more sustainable.

International Student Team Solar Car Botswana

The project shows that even small innovations can have a major impact. Students developed multiple prototypes, improved sensors and hardware, and designed aerodynamic connecting parts between the solar panel and the vehicle – produced in a resource-efficient way using a reusable wooden mold. The project was complemented by an app for visualizing vehicle data.

Our three Solar Car projects exemplify the combination of technology, environmental awareness, and education. Such projects strengthen international collaboration, promote hands-on project management, and deepen understanding of sustainable mobility. In this way, they make an important contribution to the vision of a smart, green, and future-ready world.

Solar Car Botswana

Solar Golf Car Gran Canaria

Gardenbot: Precision Agriculture of the Future

Our Gardenbot Project is based on a Columbian Smart Farming Project called "FarmBot". It was developed during our first SMART FARMING MAKEATHON 2017 in Bogota, Columbia. This project was realized with the help of an international student team in collaboration with the Columbian University of Los Andes.

The aim of the Gardenbot Project is to investigate various cultivation and management strategies. In addition, we want to better protect plantations from external influences, bad weather conditions and pests in the future, as well as control growth. So with this, a new solution was created that can not only be useful for agriculture, but also for private households. Farmers and consumers can automatically and intelligently manage, monitor, and control their fruits and vegetable beds.

To make this possible, a small test bed was created for the project and the Gardenbot robot was attached to the bed. The attached controller can move autonomously within the bed and carry out processes such as sowing, watering and moisture measurement. Thus, the planting and treatment of the bed can be automated without human labour, so that the consumer only harvests his own crops.

Via an open-source web app, it is possible to keep better track of the harvest. The web app can be downloaded to any computer, tablet, or smartphone with a modern web browser, allowing the user to customize, adjust and control his own plantation at any time and from anywhere. In addition, the user can use the manual control elements to move the Gardenbot and operate its tools and peripherals in real time.

Thus, as an innovative Smart & Green Technology, our Gardenbot has the potential to advance Agriculture 4.0. This technology will increase the yield of fruits and vegetables while conserving resources. For this reason, Agriculture 4.0 is also named as the new precision agriculture of the future. With the help of digitalization and artificial intelligence, technological advances can be made possible in agriculture and innovative concepts can be developed.

In addition to developing effective problem-solving approaches, projects such as the Gardenbot help students to link their theoretical knowledge with practice and thus expand their technological know-how with real projects. The practical implementation enhances an intensive examination of the subject matter and, above all, raises the awareness of young people for global themes such as digitalization and sustainability.

Sandwich-Robot: Learning with Industrial Robots

The Sandwich Robot Demonstrator was developed during a two-month Summer Internship Program. Involved in the development process was an international and interdisciplinary team of 5 students from the University of Cambridge and the University of Las Palmas de Gran Canaria.

The special feature of the Sandwich Robot project is that the demonstrator consists of several devices and hardware from different companies. The materials were sponsored as part of this educational project. The sandwich robot consists of a robot arm and delta robot from igus, an XTS rail from Beckhoff, a delta robot from B&R and Phoenix Contact, which work together as one unit. With the help of the existing industrial

hardware, which was provided by the participating companies, innovative solutions can be realized by the students. They can directly program the PLC's of different manufacturers and thus bring the plant to life. By using the latest technologies like the OPC UA protocol, the hardware of different manufacturers can be used, and the plant can communicate beyond its interfaces.

For the user of the Sandwich Demonstrator to receive a finished product, they must customize the sandwich before the manufacturing process. Using an app made specifically for the Sandwich Robot, the operator can first select their own preferred type of bread. Then they can choose their individually desired toppings, as well as the sauce(s). As soon as the user has assembled the sandwich via the app, the Sandwich Robot starts preparing it. In the first step, the igus Robot Arm brings the bread to a rail fixture of the XTS rail, which forwards the bread to two Delta Robots. The Delta Robots then prepare the sandwich with the selected ingredients. Now the sandwich can be removed and eaten by the operator.

With our Sandwich Robot Project we created an opportunity to better prepare young talents for future technologies and to get them excited about technology. In addition, the project is meant to encourage young people to show initiative in solving problems and to develop innovative solutions and ideas in the field of Smart & Green Technologies. Furthermore, such real projects or demonstration plants can be used to make topics such as automation, batch size 1 manufacturing, IoT and robotics more tangible and learnable within a very short time. This way, young people will be able to make their own contributions in the future and develop real smart machines and systems, which in turn will benefit the participating companies.

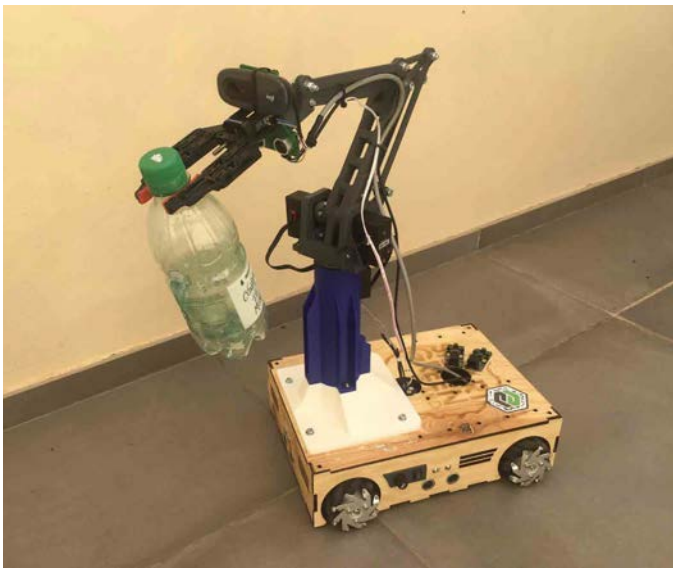
PlastiX: Artificial Intelligence against Plastic Pollution

Besides the climate change, removal of plastic waste from the environment is one of the key ecological challenges and problems of the 21st century. Therefore, we decided to start a project whose main goal is to find suitable and innovative solutions against plastic pollution. During our SMART GREEN ISLAND Summer Camp in September 2019, we developed concepts to solve this problem in an automated and efficient way. This laid the foundation for a smart, innovative, and sustainable project – the so-called PlastiX Project.

The PlastiX mission is dedicated to AI-based detection and automated professional disposal of plastic waste from the environment. The project was developed by an interdisciplinary and international team of 10 young talents. As part of the project a concept of a database for training neuronal networks was created. In addition, the project team developed the first robot prototypes. A total of 7 robots were developed that could be used for various purposes.

With the further developed robot “roBottle”, a new mobile robot has been developed to autonomously collect already existing and improperly disposed waste e.g., at the beach or in the forest etc. In addition, the mobile robot will use modern infrastructure and IoT technologies to act autonomously and efficiently with the help of Artificial Intelligence (AI). AI algorithms ensure that the robot can perceive the environment like a human. For this purpose, a camera at the front end of the gripper serves as an eye, with the help of which it can recognize and collect plastic bottles and other environmentally harmful objects. What sounds easy for a human is hard work for a robot. The robot must be able to recognize bottles as such and navigate to them. The collected waste should then be transported to a station that can recycle all or a part of the waste. The robot's chassis was made of plywood and the components of its robotic arm were made of environmentally friendly and compostable PLA. In addition, the robot was equipped with Swedish wheels. After the kinematics were solved, the robot was able to move without mechanical constraints.

Our vision within the PlastiX Project is to unite the topics of digitalization and sustainability and to find efficient solutions regarding the problem of plastic pollution. In order to achieve this goal and to realize our vision, the prototypes of the young talents, which were developed with the help of artificially intelligent systems, should and must be turned into reality in the future. Furthermore, above all our intention is to sensitize young people worldwide to the topics of digitalization and sustainability and to encourage them to actively deal with the problems of today, as well as to find and implement effective innovative solutions for the future in such projects.

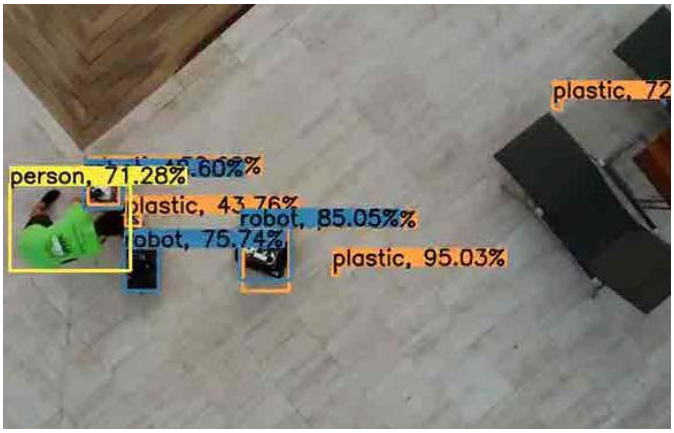


CirQmind: Circular Economy through Circular Society

It's hard to imagine everyday life without plastic, as it is used worldwide in nearly every area of everyday life. At the same time, the growing pollution of oceans, soils, and cities represent one of the greatest ecological challenges of our time. Long-lasting plastic waste endangers ecosystems, reduces quality of life, and clearly shows that simply collecting and recycling is not enough to solve this global problem. What is needed are new strategies, interdisciplinary networks, and innovative educational approaches to actively shape the transition toward a sustainable circular economy.

Against this backdrop, CirQmind – Circular Economy through Circular Society was launched. Building on the successes of the PlastiX project, which used drones and AI systems to demonstrate ways of automatically detecting and removing plastic waste, CirQmind takes the next step. This initiative of the Gerda Stetter Foundation – Technology is fun! in cooperation with ITQ GmbH pursues the goal of bringing the principles of the circular economy into society and into education.

At its core is the belief that a functioning circular economy can only emerge with an engaged circular society. CirQmind aims to inspire young people with sustainability, technology, and resource conservation. Through workshops, projects, and MAKEATHONS, school students, university students, and young engineers are encouraged to develop their own ideas for intelligent waste collection, material processing, and reuse.



Modern technologies such as AI-based object recognition, sensor technology, and autonomous systems are used in the process. In this way, environmental protection becomes tangible and technical understanding is promoted in a hands-on manner. An important component is the open-source project EduDemoS, which integrates the circular concept into education. Here, recycled plastic filament can be used to produce learning objects and demonstrators with the help of 3D printers. Teachers and learners actively engage with sustainable technologies and experience how resource conservation and digitalization go hand in hand.

In addition, CirQmind works with the initiatives Startupscheune and RecycleBar of an ITQ employee. Both partners contribute creative approaches and practice-oriented solutions – such as recycling plastic bottle caps – to the network. Together, a vibrant ecosystem is being created that connects education, technology, and environmental awareness.

CirQmind's roadmap includes regional educational initiatives, MAKEATHONS, and international presentations at trade fairs such as drinktec 2025, interpack 2026, and automatica 2027. There, results and prototypes will be presented that demonstrate how young talents can make concrete contributions to a more sustainable future.

CirQmind stands for the connection between technology, education, and social responsibility. The project shows how innovative ideas and collaborative action can grow into a movement – toward a Circular Society in which knowledge, creativity, and sustainability point the way to the future.

Video CirQmind
www.youtube.com/ITQGmbH

CirQmind
Circular Economy through Circular Society

Erasmus+ Program: In the same Code

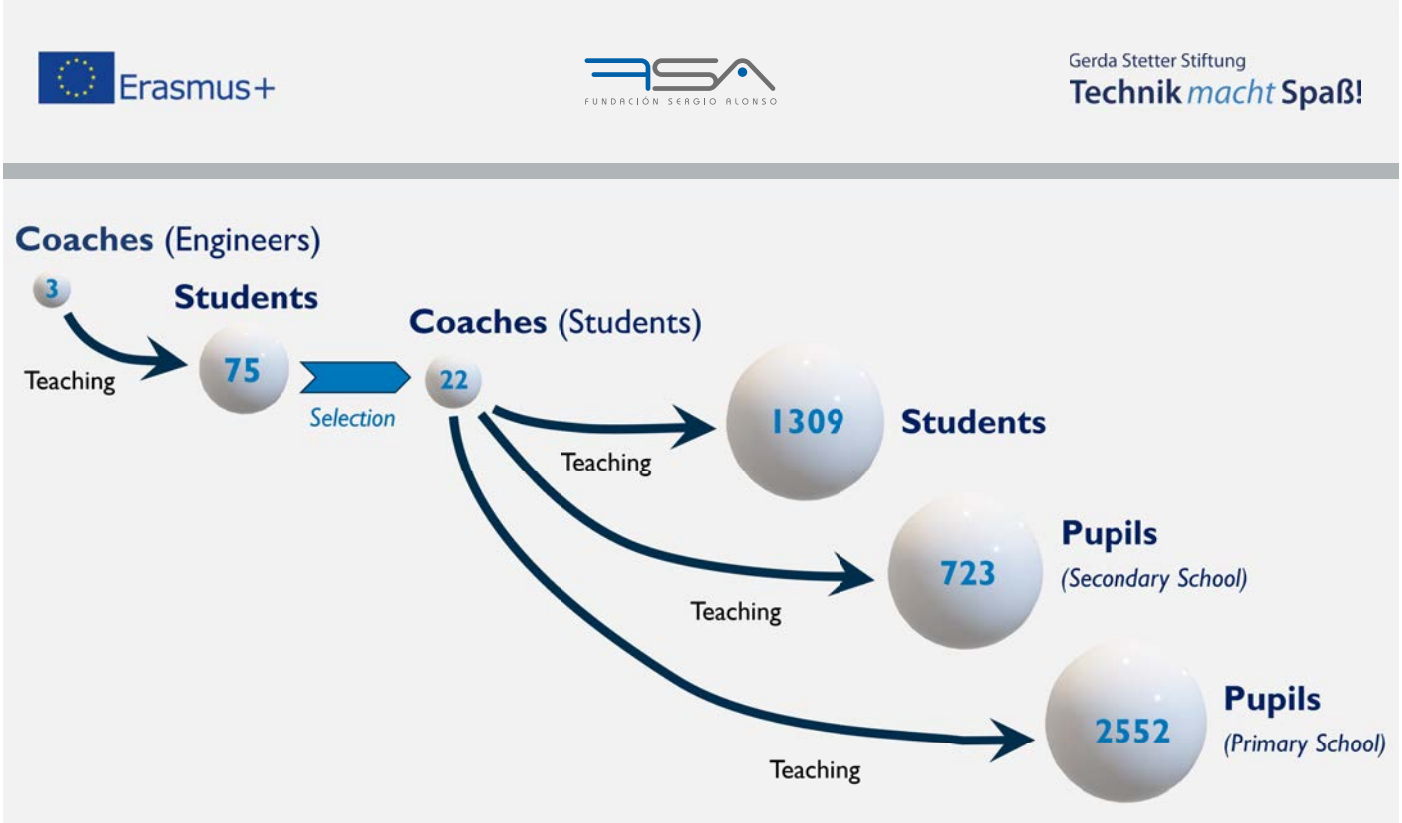
We are living in an era of transformation that affects all aspects of life equally. However, the education system is falling behind – an alarming issue considering the shortage of skilled professionals in STEM fields. To counter this development, we outlined the cascading Snowball Principle in a European Erasmus+ pilot project together with the Foundation Sergio Alonso on Gran Canaria.

Through this initiative, we combined our expertise with that of our partners and sustainably expanded our network. Initially, three tech coaches (one engineer, one male student, and one female student) were trained.

Over nine months, they in turn taught 75 STEM students to build and program small robots using Scratch. From these 75 students, 22 volunteered as coaches. A remarkable aspect of this process was the gender ratio: out of the original 38 young women, a disproportionately high number volunteered for coaching, resulting in 14 out of the 22 new coaches being female. Between September 2022 and July 2024, these coaches conducted over 166 workshops at vocational schools, secondary schools, and even elementary schools, engaging a total of 4,681 children and young people with STEM in a playful and interactive way. Nayra Morales, Director of the Foundation and Project Manager, points out: "With the coaching approach "In the same Code", we can reach a large number of young talents very quickly, who are then further supported in specialized advanced courses."

This unique combination of learning and teaching – being supported and challenged, then supporting and challenging others of the same age – has proven to be extremely effective." In the same Code" has successfully demonstrated what it takes to implement a project on a European scale.

Foundation Sergio Alonso successfully implements Erasmus+ pilot project using the Snowball Principle



CraCoSu Project

Co-funded by the European Union

Ministerium für Wirtschaft, Industrie, Klimaschutz und Energie des Landes Nordrhein-Westfalen

With the popular game Minecraft, learning with the "Technology is fun" foundation becomes an adventure: students build, program, and tinker with their own sustainable worlds. The EU-funded research project CraCoSu – "Craft & Code for Sustainability", in cooperation with Rhine-Waal University of Applied Sciences, aims to strengthen the connection between digital creativity, environmental awareness, and technological know-how.

In hands-on workshops, participants develop their own ideas related to energy, recycling, and climate protection. Minecraft is used as a creative learning platform to teach technological concepts in a playful way. Across different difficulty levels, children and young people learn how logical thinking, teamwork, and digital tools can help them find solutions to real-world problems.

Participants apply concepts such as variables, conditions, and loops, thereby expanding their programming skills. In a professional development environment, they successfully solve tasks in areas such as renewable energy, water management, and wastewater management – and experience how playful exploration can turn into practical technical understanding.

CraCoSu demonstrates how game-based elements in Minecraft can be used in a targeted way to spark enthusiasm for technology and sustainability.

The different learning levels make it possible to support children and young people individually according to their age and level of knowledge. This creates a motivating learning environment that combines fun, creativity, and future skills. Since the project started in 2024, we have held 24 workshops – at schools, at HSRW, at ITQ, and directly on-site at our corporate partners.

Particularly impressive were the workshops as part of the Hack Day Niederrhein as well as at LINEG and Stadtwerke Kamp-Lintfort, where participants technically solved real operational challenges. In total, 302 children and young people in North Rhine-Westphalia took part, complemented by international workshops on Gran Canaria as well as during Girls' Day in Garching and Duisburg.

CraCoSu shows how digital education succeeds when creativity, technology, and sustainability come together. The project is part of the Pact for Computer Science 2.0 and is co-financed by the European Union until September 2026 through ERDF/JTF funds.

With CraCoSu, Minecraft becomes more than just a game – it becomes a tool that enables young people to shape their sustainable future themselves. Technology meets creativity. Knowledge meets responsibility. And every day, we can witness just how much enthusiasm lies within every child.

EduDemoS Project

EDUDEMOS

Co-funded by the European Union

Climate is changing, resources are becoming scarcer, and the number of skilled professionals in technical occupations is steadily declining. These developments pose major challenges for society, business, and education alike. The EU-funded project EduDemoS (EDUcating through Sustainable DEMOnstratorS) created a program that actively shapes the transition to a digital and sustainable future. It shows how European cooperation can rethink education and make it tangible – hands-on, open, and future-oriented.

Many curricula at schools, vocational schools, and universities now reference sustainability and digitalization – yet in everyday teaching, the appropriate materials are often missing to make these topics truly tangible. This is exactly where EduDemoS comes in: the project closes the gap between aspiration and practice. It makes the connection between digital innovation and ecological thinking directly experienceable for learners. Instead of only talking about it, they can experiment with concrete tools, try things out, and understand how future technologies work.

Europe is facing profound structural change, driven forward by the European Green Deal and the EU's Digital Agenda. For vocational schools and companies, this means having to fundamentally realign themselves. Yet teachers are often faced with the question of how sustainability can be integrated into lessons in a concrete way. EduDemoS was developed precisely in response to this need – as an answer to the lack of hands-on teaching materials and the shortage of educational concepts that meaningfully combine sustainability and digitalization. The project consortium – consisting of the Gerda Stetter Foundation, Fundación Sergio Alonso (Spain), the Finnova Foundation (Belgium), and GBS St. Gallen (Switzerland) – brings together technical, pedagogical, and organizational expertise. All partners contribute experience from previous educational projects, particularly from European Erasmus+ initiatives.

Together, they pursue the goal of making learning tangible again and strengthening STEM education in Europe. At the heart of the project are the "sustainable" demonstrators: small, low-cost models that learners build and program themselves. They address topics such as solar and wind energy or water treatment and combine practical craftsmanship with technical and digital skills.

The models are complemented by a digital IoT dashboard that enables real-time collection and analysis of data such as energy yield, temperature, or humidity. In this way, sustainability and technology are not only taught but directly experienced.

All materials are openly accessible: step-by-step instructions, CAD files, parts lists, and programming code are freely available at www.edudemos.eu.

"Funded by the European Union. However, the views and opinions expressed are solely those of the author(s) and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor the EACEA can be held responsible for them."

As a result, (vocational) schools and training centers across Europe – regardless of their financial resources – can use the demonstrators.

Especially in structurally weaker regions, the project opens new opportunities to integrate modern technical education into teaching at low cost.

Another key focus is the further training of teachers. Originally, participation by ten teachers and around 90 students was planned. In fact, interest exceeded all expectations: a total of 28 teachers and 162 learners took part directly – 12 in the Teacher Academy, 92 students and 11 teachers in local academies, and 42 students and five teachers at the final event in Brussels. Over the course of the project, 50 demonstrators were created, including 20 with IoT connectivity.

To achieve this, complete kits with 3D-printed components and electronic materials were developed and logistically coordinated between Spain, Germany, Switzerland, and Belgium. The project's success is reflected not only in numbers, but also in its impact.

EduDemoS has succeeded in bringing the often-abstract concept of sustainability to life. Students – whether teenagers or already adults – experience that technology is not only useful but can also be meaningful when it contributes to protecting the environment.

Teachers report a noticeable boost in motivation: students who previously showed little interest in technology developed enthusiasm for renewable energy, programming, and engineering thinking through building, tinkering, and measuring on their own.

Through presentations at international trade fairs – including electronica and automatica in Munich as well as didacta in Stuttgart – the project gained visibility across Europe.

In total, EduDemoS reached more than 1,300 participants and numerous schools, vocational colleges, and educational institutions in Germany, Spain, Belgium, and Switzerland.

EduDemoS proves that hands-on, open, and inclusive education is a key to Europe's sustainable future.

The project connects digitalization and environmental protection, theory and practice, learning and action – and shows how learning can once again create meaning.

In this way, education becomes a driver of change, and the transfer of knowledge becomes the shaping of the future.

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AI Demonstrators: Intelligent Robotics for the Future

With the development of various AI Demonstrators, the Robotics and AI Team at ITQ GmbH shows how innovative technologies can become a tangible experience.

In Duisburg, Berlin, and Gran Canaria, engineers and students work together to make the possibilities of robotics, machine learning, and digitalization visible.

The goal: to demonstrate, using demonstrators, how artificial intelligence is shaping the automation of tomorrow and how knowledge can be shared across borders. What began as a single idea has developed into a comprehensive roadmap.

In the future, all demonstrators are to be connected via the so-called AI Multi-Robot Voice Assistant and controllable through a shared output board, the "POWERWALL." Voice commands thus become interfaces between humans and machines.

AI Candy Machine Demonstrator

Students in Duisburg are working on the AI Candy Machine – a demonstrator that combines computer vision and artificial intelligence. Originally developed as a clever candy machine, it recognizes and sorts different objects using custom-trained datasets.

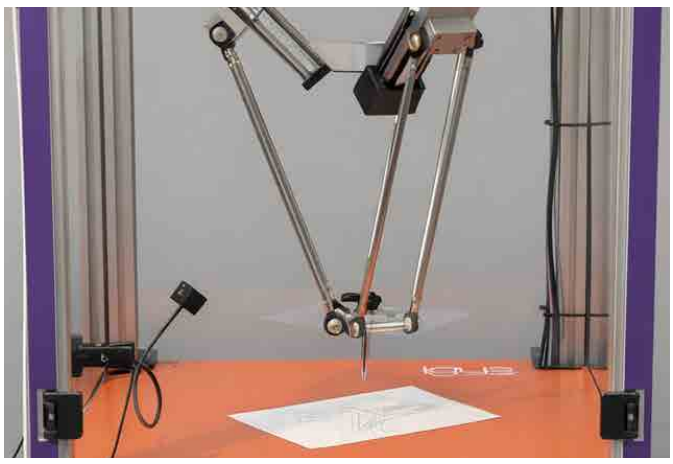
The system can selectively pick individual candies as well as detect and sort packaging. This makes it a model for sustainable sorting and recycling processes at the same time.

Step by step the development takes place: after creating their own datasets, training recognition models, and building initial prototypes, the system is continuously expanded. The aim is to turn a playful idea into a practical application that connects learning, automation, and sustainability.

AI Drawing Robot Demonstrator

In Berlin and on Gran Canaria, student teams are working on several robots at the same time. The AI Drawing Robot Demonstrator is at the center of this development.

Using speech recognition and computer vision, the drawing robot translates instructions into precise movements and independently creates images.



The software uses neural networks to generate a line structure from an image template or a verbal description, which the robotic arm then physically executes.

In this way, language becomes the interface between humans and machines – and the robot itself becomes a creative actor.

AI Plant on Demand Demonstrator

The AI Plant on Demand Demonstrator (AI Robot Cell) explores how robots can learn to harvest plants autonomously using reinforcement learning.

Through repeated trial and error, they optimize their movements and actions until they can grip and place precisely. This creates a learning system that continuously improves itself and reacts flexibly to changing conditions.

The demonstrator shows how AI can contribute to greater efficiency and resource conservation – both in agriculture and in industrial applications.

For students, this demonstrator provides a hands-on platform to apply modern learning algorithms and understand how functioning robotic systems emerge from theoretical concepts. The project was developed in collaboration with Salesforce and the Institute for Machine Tools and Industrial Management (iwb – TUM Munich).

Video AI Plant on Demand Demonstrator
www.youtube.com/ITQGmbH

Drones and AI for Sustainability

The PlastiX project was launched in 2019 during the SMART GREEN ISLAND Summer Camp and focuses on AI-based detection and removal of plastic waste.

Since 2025, the project has been part of the initiative “CirQmind – Circular Economy through Circular Society” and relies on the combination of drone technology, camera systems, and artificial intelligence.

The goal is to develop a system that detects, maps, and sorts waste in order to reuse valuable materials efficiently.

A roadmap through 2027 includes numerous trade fairs and events, culminating in a major finale at automatica 2027, where several distributed demonstrators and drones are to be showcased together.

PlastiX is a prime example of how technological innovation and ecological responsibility can work together. The AI Demonstrators show how responsibility and progress can go hand in hand.

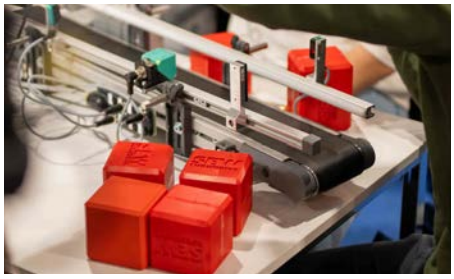
They represent a future in which artificial intelligence, robotics, and sustainability are not opposites, but jointly point the way toward a connected, intelligent, and resource-efficient world.

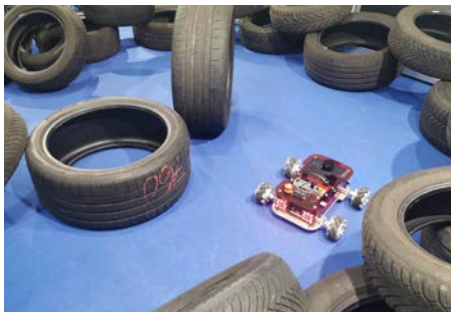
November 2024: 1. SPS MAKEATHON

MAKEATHON at the SPS Fair in Nuremberg, November 12-14






Video SPS MAKEATHON
www.youtube.com/ITQGmbH

November 2024: 1. electronica MAKEATHON

MAKEATHON and Technology Workshops at the electronica Fair in Munich, November 15

EDUDEMOS electronica Texas Instruments





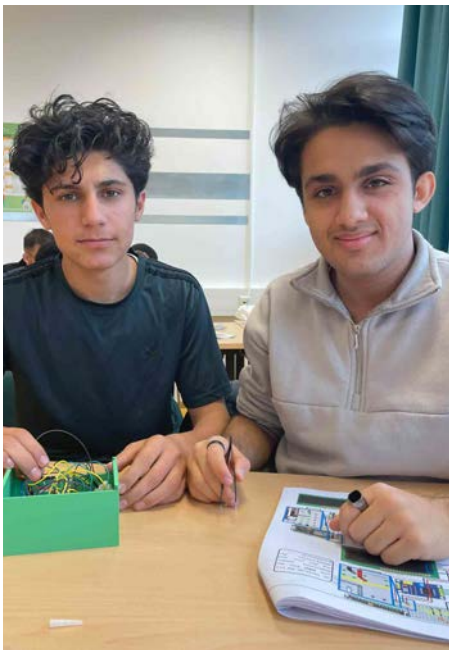


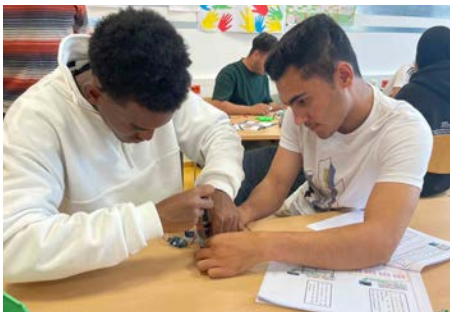


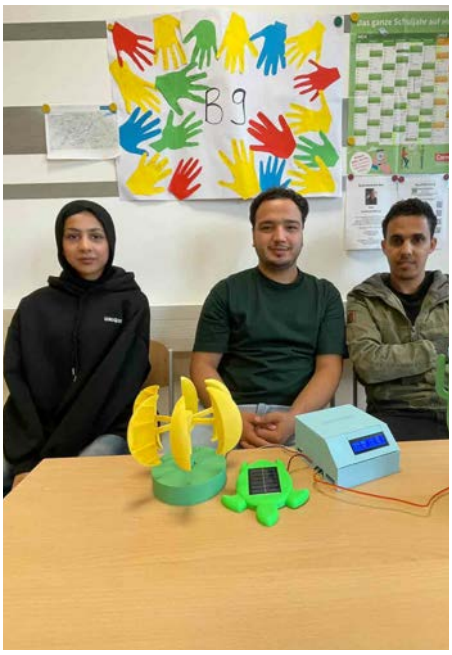

Video electronica MAKEATHON
www.youtube.com/ITQGmbH

November 2024: EduDemoS Workshop

EduDemoS Workshop with Vocational Students at the Municipal Vocational School in Giesing, November 18

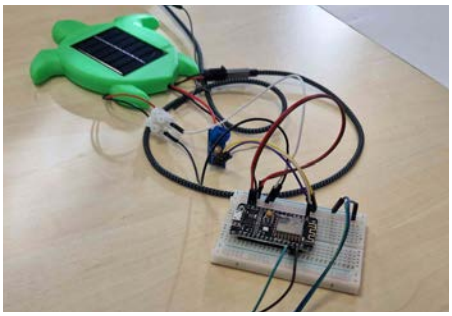






November 2024: EduDemoS Workshop

EduDemoS Workshop with Pupils at ITQ in Garching, November 21

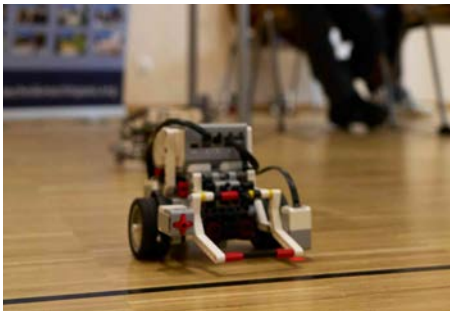


November 2024: VHS Cleaning Robot Workshop

Course with Children at the Adult Education Center (VHS) Garching, November 23

December 2024: VHS LEGO Mindstorms Workshop

Course with Children at the Adult Education Center (VHS) Garching, December 07



The Year 2025 in Pictures

January 2025: MakerLab – Learning to Code

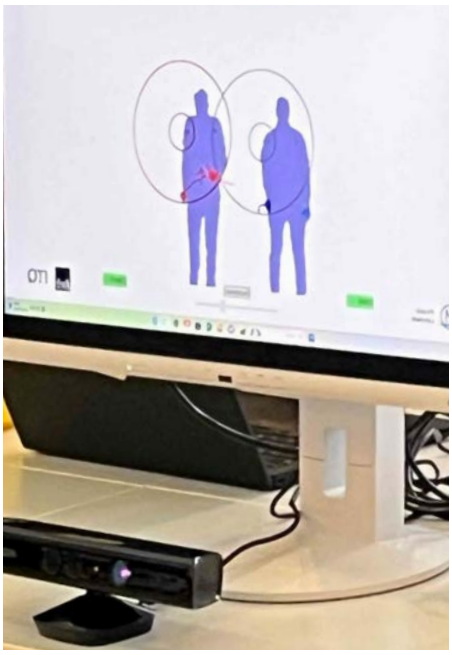
MakerLab at Rhine-Waal University of Applied Sciences in Kamp-Lintfort, January 11

January 2025: TUM 1000+ Project

Idea workshop "Safe Software Process in Mechatronics" at ITQ in Garching, January 12-17

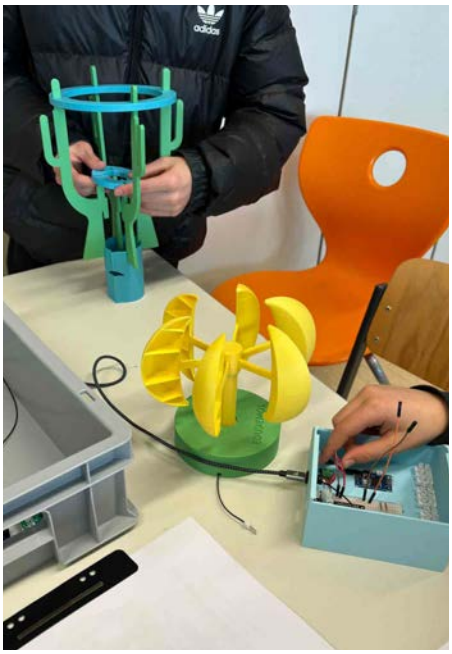
January 2025: Open Day

Presentation of our Technology Workshops at Sparkasse in Duisburg, January 24



January 2025: EduDemoS Workshop

EduDemoS Workshop with Pupils at Lehrer-Wirth-Mittelschule in Munich, January 27

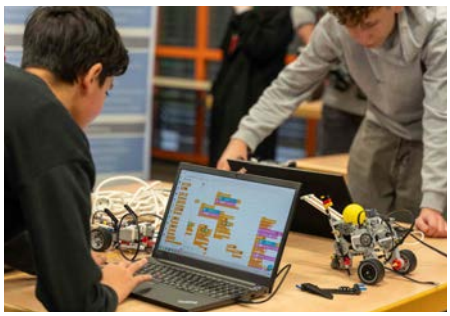


The Year 2025 in Pictures

January 2025: Robolympics Duisburg

Robotics Competition at the University of Duisburg-Essen, January 30





Our training activities are spread across Germany. For many years, projects have been taking place in Duisburg in cooperation with the local Rhine-Waal University of Applied Sciences as well as the University of Duisburg-Essen.

This year, we were very active with the EU-funded project CraCoSu – "Craft & Code for Sustainability" in cooperation with Rhine-Waal University of Applied Sciences.

Up to the middle of the year, we held numerous programming workshops with the goal of teaching young people the importance of climate protection in the context of digitalization – within the child-friendly MINECRAFT world.

Now in its ninth year, we have been offering seminars in cooperation with the Chair of Mechatronics at the University of Duisburg, including on the topic "Excursion and Seminar Product Development." At the start of each winter semester, between 30 and 40 students are trained as technology coaches. Afterwards, the students must develop their own teaching concept, which they then implement at schools in Duisburg. The seminar concludes with participation in the Robolympics, where schools compete against each other in different robot courses.

A special highlight this year was the MakeHeaven MAKEATHON 2025 in cooperation with BBS Wilhelmshaven and New Automation e.V.: international students and young engineers developed creative solutions over three days focussing on Sustainability, Robotics, and Circular Economy. At the heart of the event was the connection between technology, education, and environmental awareness.

February 2025: didacta EduDemoS Workshop

EduDemoS Workshop at the didacta Fair in Stuttgart, February 13

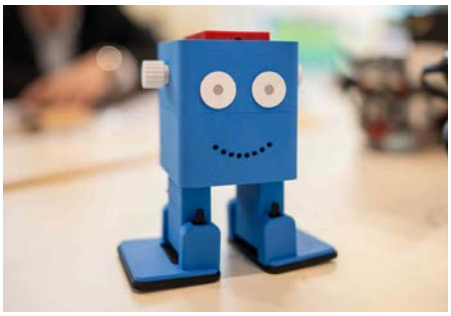
didacta die Bildungsmesse
EDUDEMOS











Video didacta Fair
www.youtube.com/ITQGmbH

The Year 2025 in Pictures

February 2025: Lions Club Event

EduDemoS Presentation for Members' Children in Munich, February 15

February 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Rhine-Waal University of Applied Sciences in Kamp-Lintfort, February 15

February 2025: LEGO Mindstorms Workshop

LEGO Mindstorms Workshop with Pupils at TCW in Nördlingen, February 17





March 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Rhine-Waal University of Applied Sciences in Kamp-Lintfort, March 12




The Year 2025 in Pictures

March 2025: 8. SMART GREEN ISLAND MAKEATHON

International MAKEATHON on Gran Canaria, March 12-15










Smart Green Island Makeathon Short Impression www.youtube.com/ITQGmbH

March 2025: 8. SMART GREEN ISLAND MAKEATHON

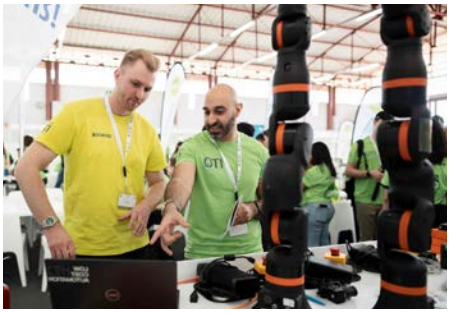
International MAKEATHON on Gran Canaria, March 12-15









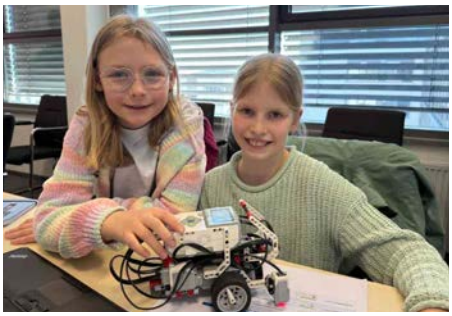


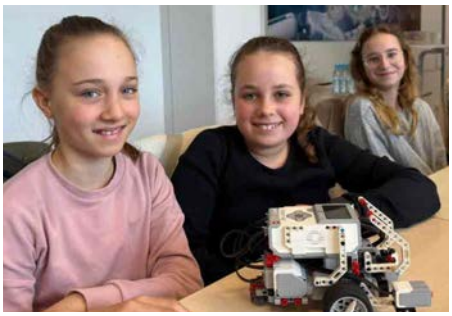
Smart Green Island Makeathon Aftermovie
www.youtube.com/ITQGmbH

The Year 2025 in Pictures

April 2025: Girls‘ Day

LEGO Mindstorms & Minecraft Workshop with Children at ITQ in Garching and Duisburg, April 03





April 2025: EduDemoS Workshop

EduDemoS Workshop with Pupils at RSI Realschule in Immenstadt, April 08





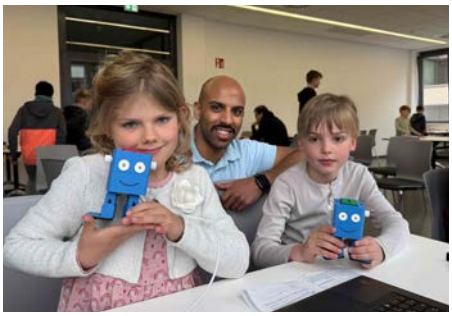
April 2025: Scratch Workshop

Scratch Workshop with Children at ITQ in Duisburg, April 08




April 2025: LEGO Mindstorms & KARL Robot Workshop

LEGO Mindstorms & KARL Robot Workshop with Children at the University of Paderborn, April 23



The Year 2025 in Pictures

April 2025: 1. MakeHeaven MAKEATHON

MAKEATHON with the BBS Vocational School Wilhelmshaven in Wilhelmshaven, April 23-25










Homepage Make HeAVEN MAKEATHON
www.makeheaven.de


April 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Gesamtschule Saarn in Mülheim an der Ruhr, April 30

May 2025: 1. ees Europe MAKEATHON

MAKEATHON at the ees Europe Fair in Munich, May 07-09

The Year 2025 in Pictures

May 2025: VHS Cleaning Robot Workshop

Course with Children at the Adult Education Center (VHS) Garching, May 10

May 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Children at ITQ in Duisburg, May 12

May 2025: VHS LEGO Mindstorms Workshop

Course with Children at the Adult Education Center (VHS) Garching, May 24

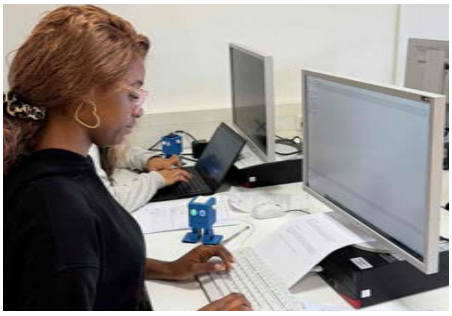
June 2025: EduDemoS Workshop

EduDemoS Workshop with Students at the Vocational School for Career Integration in Munich, June 03

The Year 2025 in Pictures

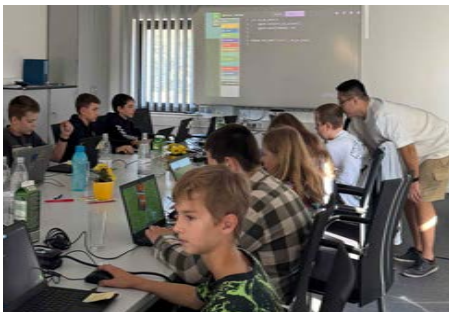
June 2025: KARL Robot Workshop

KARL Robot Workshop with Students at the Vocational School for Career Integration in Munich, June 06



June 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Stadtwerke Kamp-Lintfort in Kamp-Lintfort, June 09

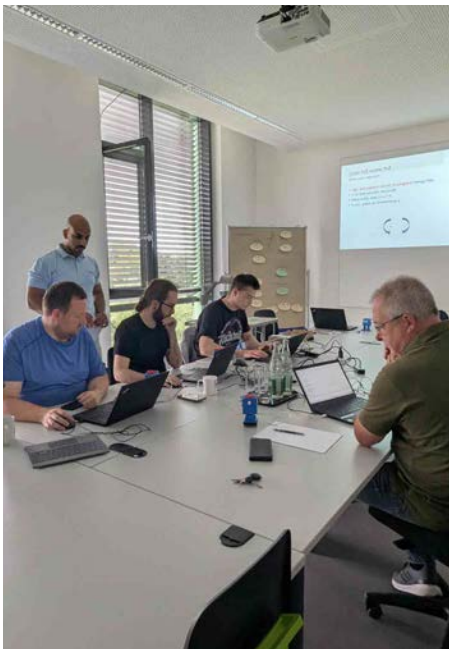


June 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Justus Liebig School in Duisburg, June 23 & 26

June 2025: KARL Robot Workshop

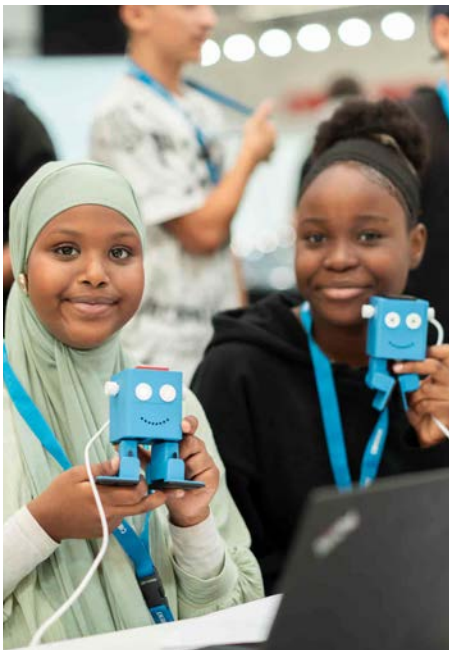
KARL Robot Workshop with Students at the Westphalian University of Applied Sciences in Gelsenkirchen, June 27

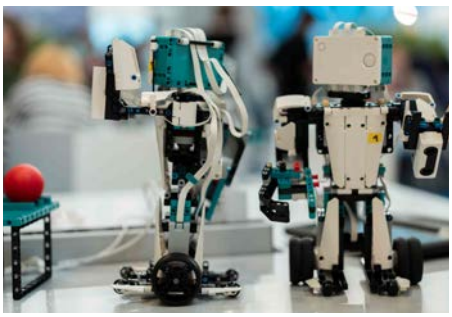


The Year 2025 in Pictures

June 2025: 3. automatica MAKEATHON

MAKEATHON and Technology Workshops at the automatica Fair in Munich, June 27





Video automatica MAKEATHON
www.youtube.com/ITQGmbH

June 2025: 3. automatica MAKEATHON

MAKEATHON and Technology Workshops at the automatica Fair in Munich, June 27

On Friday, 27 June 2025, automatica 2025 in Munich became a vibrant stage for young technology enthusiasts. Together with ITQ GmbH, we were on site with the foundation and offered a diverse workshop and MAKEATHON program for pupils, students, and apprentices. Already the day before, ITQ working students as well as technology-minded university students were trained according to the "Coach-the-Coach" Principle.

The next day, they took charge of their first groups of children and, under the guidance of experienced coaches, ran workshops themselves. This allowed them to apply their knowledge directly and support pupils in interactive sessions.

The workshops ranged from LEGO Mindstorms and EduDemoS to the KARL Robot, Minecraft Education, and the TI Innovator Rover by Texas Instruments. Fraunhofer IAO also presented exciting experiments related to quantum technology. At the same time, the MAKEATHON took place, where teams of students and apprentices from Augsburg University of Applied Sciences developed innovative ideas and implemented them in initial prototypes. A highlight was the first drawing devices, which combined creativity, technology, and precision in an impressive way.

In addition, the Pib Robot from Isento attracted many spectators and sparked visitors' curiosity about the world of robotics. With enthusiasm, team spirit, and a willingness to experiment, the foundation succeeded in inspiring young people about technology and showing them that the future can be shaped with joy through technology.

The Year 2025 in Pictures

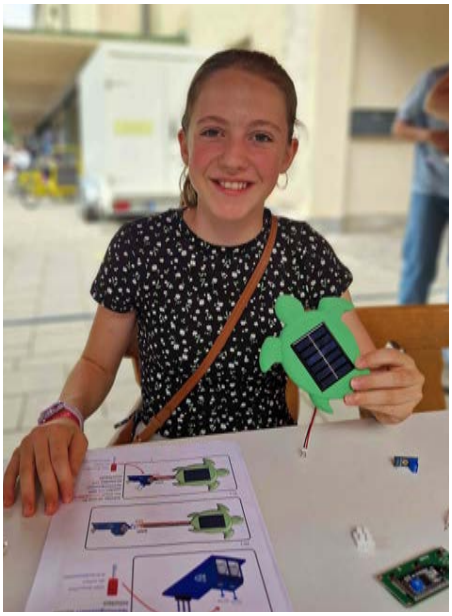
July 2025: Festival of the Future

Technology Workshops at Deutsches Museum in Munich, July 06-07












Video Festival of the Future
www.youtube.com/ITQGmbH

July 2025: Festival of the Future

Technology Workshops at Deutsches Museum in Munich, July 06-07

This year, the "Festival of the Future" once again took place at the Deutsches Museum in Munich. From 06 to 07 July, there were once again many activities for children and families on the Museum Island, including Technology Workshops and Stage Events. Naturally, our foundation was present with a dedicated team, inspiring both children and adults to discover the fun in technology.

In total, 10,000 visitors attended the "Festival of the Future". Our team consisted of technology coaches including ITQ working students, students from Munich University of Applied Sciences, Nuremberg University of Applied Sciences, the Braunau Technology Center, as well as apprentices from BRUNATA-METRONA GmbH & Co. KG, employees from MVTec Software GmbH and Texas Instruments Deutschland GmbH. The team inspired guests of all ages with LEGO Essential, Prime Education, LEGO Mindstorms EV3, the TI-Innovator Rover, KARL Robots, and EduDemoS for programming and play. In addition to the robots, there were also various LED and EduDemoS kits to build yourself. The Digital Petting Zoo 4.0 with a scorpion, cow, crocodile, and llama in the pen fascinated even the youngest visitors. The mechanical kit for a cleaning brush was also very popular.

For the apprentices from BRUNATA-METRONA GmbH & Co. KG and the technology coaches from Munich University of Applied Sciences and TU Vienna, the festival was something very special. They were trained on our technology toys just one day before the event and were able to pass on their knowledge directly using the snowball principle. Once again, many visitors were infected with enthusiasm for technology and left the event truly inspired!

July 2025: EduDemoS Workshop

EduDemoS Workshop with Pupils at Albertville-Realschule in Winnenden, July 10

Video EduDemoS Workshop
www.youtube.com/ITQGmbH

July 2025: CraCoSu Minecraft Workshop

Minecraft Workshop with Pupils at Justus Liebig School in Duisburg, July 10

July 2025: Robotics Competition

Robotics Competition as part of the Soft Skills Internship at Technical University of Munich in Garching, July 17

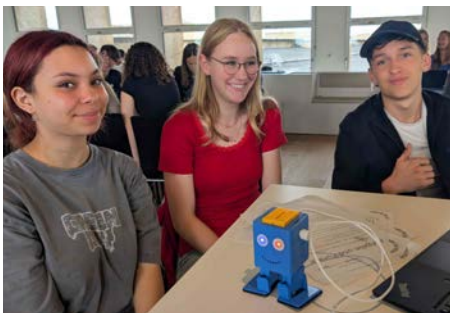
The Year 2025 in Pictures

July 2025: KARL Robot Workshop

KARL Robot Workshop with Pupils of John Lennon Gymnasium at Tempelhof Airport in Berlin, July 17

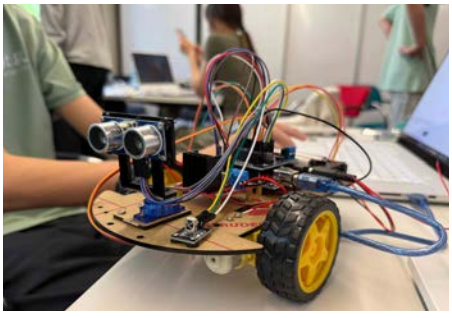






July 2025: Summer School MAKEATHON

MAKEATHON in Cooperation with UnternehmerTUM in Garching, July 24

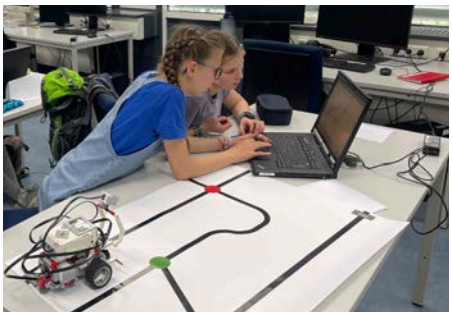



August 2025: LEGO Mindstorms Workshop

LEGO Mindstorms Workshop with Pupils at TCW in Nördlingen, July 29

August 2025: Girls Do Technology

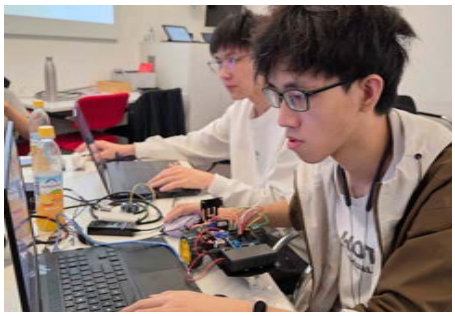
LEGO Mindstorms Workshop with Pupils at Technical University of Munich in Garching, August 06-07



The Year 2025 in Pictures

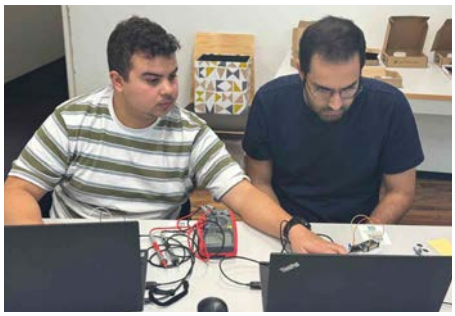
August 2025: Summer School MAKEATHON

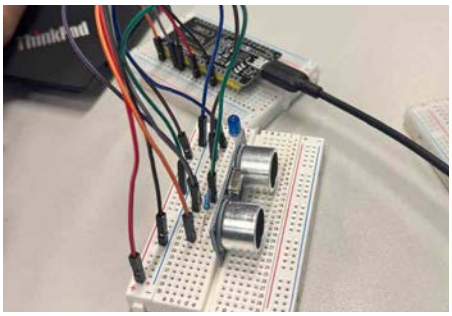
MAKEATHON in Cooperation with UnternehmerTUM in Garching, August 21



September 2025: Arduino Workshop

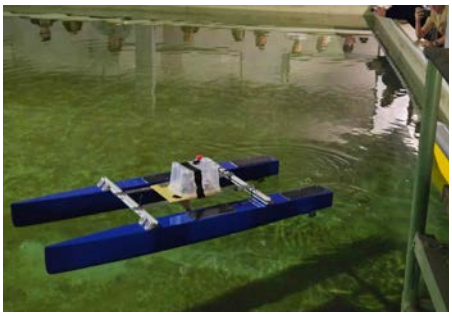
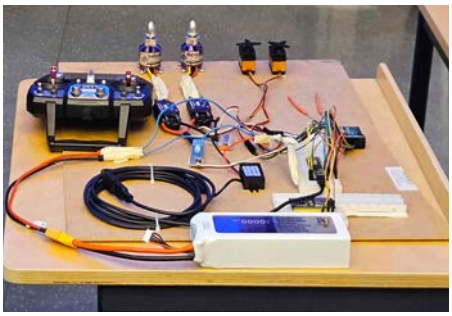
Arduino Workshop with Students at ITQ in Duisburg, September 01



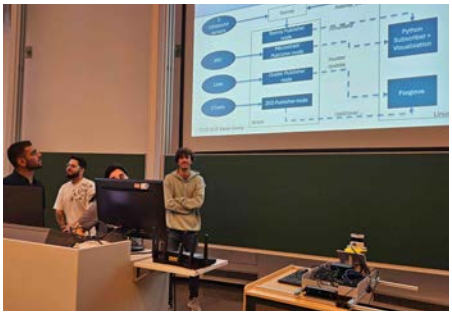


September 2025: Prototyping Autonomous Model Boats

Block Seminar "Planning and Development of Mechatronic Products" in Duisburg, September 08-12





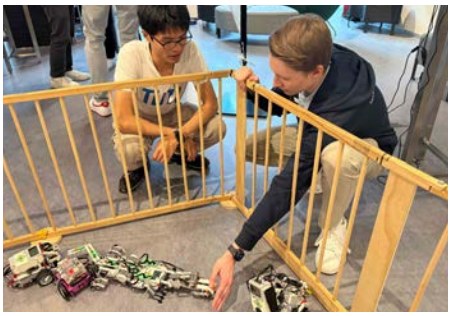
September 2025: drinktec Fair

Presentation of our new CirQmind Project at the drinktec Fair in Munich, September 15-19


The Year 2025 in Pictures

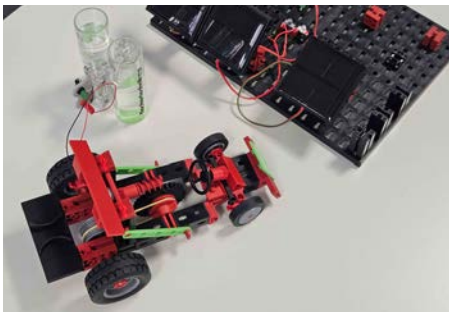
October 2025: RoboTUM Summit

Presentation of Digital Education Projects and Activities at Google in Munich, October 02



October 2025: Prototyping Hydrogen Excavators

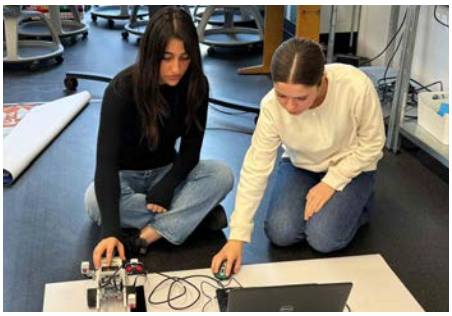
Lecture "Interdisciplinary Project" at Rhine-Waal University of Applied Sciences in Kamp-Lintfort, October 02



October 2025: LEGO Mindstorms Workshop

LEGO Mindstorms Workshop with Female Pupils at the University of Ruhr West in Bottrop, October 09





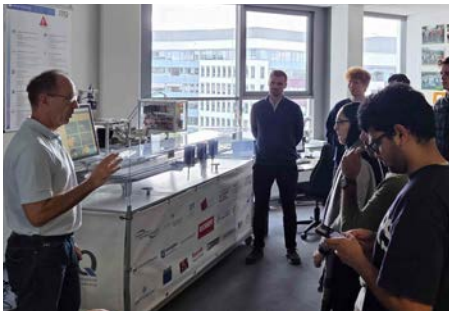
October 2025: Salesforce Event

Presentation of our new AI Plant on Demand Demonstrator in Munich, October 09


The Year 2025 in Pictures

October 2025: RoboTUM Company Crawl

Visit of RoboTUM Students at ITQ in Garching, October 15



October 2025: EduDemoS Workshop

EduDemoS Workshop with Pupils at the Vocational School for Career Integration in Munich, October 20

October 2025: Technology Workshops

Technology Workshops with Children at the University of Paderborn in Paderborn, October 23

October 2025: VHS Cleaning Robot Workshop

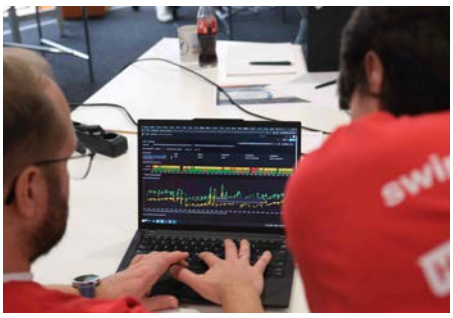
Course with Children at the Adult Education Center (VHS) Garching, October 25

The Year 2025 in Pictures

October 2025: 5. Packaging Valley Makeathon

Fifth joint MAKEATHON with the Packaging Valley e.V., October 29-30









Video Packaging Valley Makeathon
www.youtube.com/ITQGmbH

October 2025: 5. Packaging Valley Makeathon

Fifth joint MAKEATHON with the Packaging Valley e.V., October 29-30

4 locations, 4 challenges, 50 participants – and one shared goal: innovative solutions for digital and sustainable processes in the packaging industry.

From 29 to 30 October 2025, Packaging Valley, supported by ITQ GmbH, invited participants to the 5th Packaging Valley Makeathon.

At the sites in Crailsheim, Kirchheim unter Teck, Ulm, and Karlsruhe, young talents worked on forward-looking questions focusing on smart solutions for digitalization and artificial intelligence in the packaging industry.

Over two exciting and intensive days, fresh ideas met the extensive know-how of experts from the packaging sector.

The collaboration between Packaging Valley members, technology partners, institutions, universities, and students produced impressive results and confirmed the innovative power of teamwork and collective intelligence.

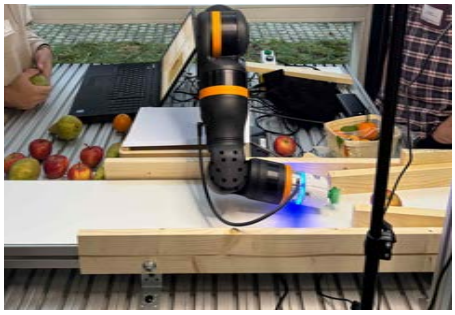
In a relaxed and creative atmosphere, a special dynamic emerged among the participants. It provided a unique opportunity to bring together different ideas and interdisciplinary perspectives, test industry-relevant solutions under real-life conditions, and courageously explore new paths in digitalization and sustainability.

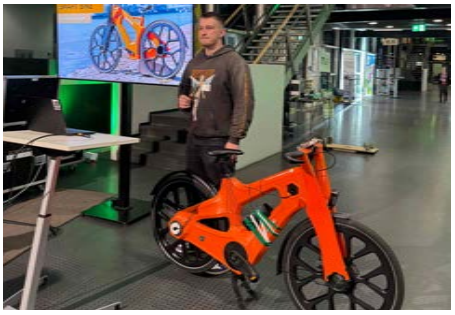
It is wonderful to see how our original MAKEATHON idea continues to be carried forward – and keeps growing.

The Year 2025 in Pictures

November 2025: 1. Ruhr MAKEATHON

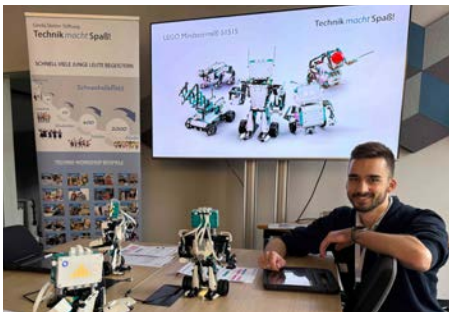
MAKEATHON with the Ruhr University Alliance in Herne, November 17-19

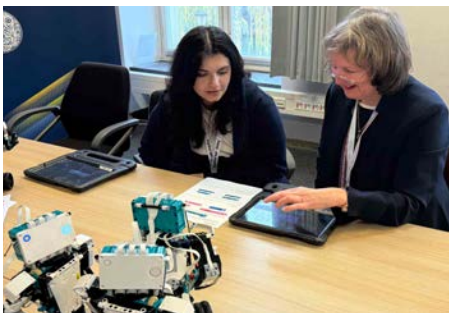




November 2025: Xplorer Day

LEGO Mindstorms Workshop at Deutsches Museum in Munich, November 19





November 2025: 2. SPS MAKEATHON

MAKEATHON at the SPS Fair in Nuremberg, November 25-27

Video SPS MAKEATHON
www.youtube.com/ITQGmbH

December 2025: 1. Loh MAKEATHON

Technology Workshops at National Car Museum Loh in Dietzhölztal-Ewersbach, December 09-10





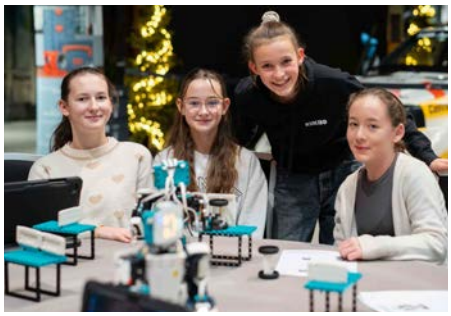





Video Loh MAKEATHON
www.youtube.com/ITQGmbH


December 2025: 1. Loh MAKEATHON

Technology Workshops at National Car Museum Loh in Dietzhölztal-Ewersbach, December 09-10



Amid legendary vehicle icons of the National Car Museum – The Loh Collection, together with Friedhelm Loh Group GmbH, on December 09 and 10, 2025, we demonstrated what contemporary youth development can look like. More than 200 young people from the Lahn-Dill district immersed themselves in around 30 hands-on workshops, programmed robots, built sensor systems, and engaged with sustainable energy and environmental technology.

On the first day of the event, our students trained selected Loh apprentices in robotics, programming, mechanics, as well as energy and environmental technology. This knowledge was already put into practice by the new technology coaches the very next day in the student workshops. During the subsequent get-together, experts from industry and universities exchanged ideas on effective strategies for modern STEM promotion. On the second day, the invited 12- to 16-year-old technology enthusiasts arrived and ventured into working with robots, programmable microcontrollers, and sustainability models. They were supervised by our coaches and the newly trained Loh apprentices. Particularly popular were workshops featuring the mBot, LEGO Mindstorms, KARL by MEDION, Arduino, Minecraft Education, as well as hydrogen models and demonstrators from the EU project EduDemoS. The program was complemented by interactive showrooms and a gearbox assembly course with SEW-EURODRIVE.

With event formats like this, we actively drive digital transformation in education. In addition to technical know-how, we specifically promote future skills such as teamwork, creative thinking, and an understanding of STEM, Industrie 4.0, and Digitalization.

Press Review

PC & Industrie — Aktuelles

Digitale Zukunft retten

100.000 Kinder sollen mit Tech-Virus infiziert werden.

Deutschland gilt lange als eine der führenden Nationen im Bereich des Industrie-Ingenieurswesens. Doch in den vergangenen Jahren hat sich die wirtschaftliche und damit auch gesellschaftliche Situation immer weiter zugespitzt. Die Gründe sind vielfältig: Durch fehlende Innovationsfähigkeit, aufgrund mangelnder Digitalisierung, lähmende Bürokratie aber auch durch weltweite Krisen wie der Klimawandel und Kriege ist Deutschland in den letzten Jahren im internationalen Vergleich ins Hintertreffen geraten. Erschwerend hinzu kommt das nicht enden wollende Thema des Fachkräftemangels.

In Deutschland verlässt die sogenannte „Boomer"-Generation, mit viel Fachwissen, in den kommenden Jahren die Unternehmen und geht in Rente. Zeitgleich konfrontieren uns jüngste PISA-Studien wieder mit mangelnden MINT-Fähigkeiten bereits bei den Kleinsten der kommenden Generationen.

Um sich diesen Effekten entgegenzustemmen, bedarf es einer massiven Anstrengung aller Generationen. Wir brauchen einen neuen Spirit des Aufbruchs, der Innovation und der Hoffnung!

Bildung als Schlüssel für Innovation

Die Grundlage für Innovation ist Bildung. Nur wer sich Wissen aneignet und in einer immer komplexer werdenden Welt auch Details in verschiedenen Bereichen versteht, kann Zusammenhänge erkennen und wirkungsvolle Maßnahmen ergreifen und umsetzen. Hierfür müssen wir bereits im Grundschulalter ansetzen und die Kinder und Jugendlichen für Technik begeistern. Dies ist eine Mammutaufgabe. Laut Statista gab es im Schuljahr 2022/2023 in Deutschland 32.666 allgemeinbildende Schulen mit knapp 9 Millionen Schülern. Die Schule allein kann das Thema MINT nicht ausreichend abdecken, weshalb seit Jahren das außerschulische Bildungsangebote von Institutionen aber auch bereits von einigen Unternehmen wächst. Das Angebot ist vielfältig, aber deckt bei weitem nicht den Bedarf.

Zugang zu MINT so einfach wie möglich

Ein Kernproblem scheint das föderalistisches Bildungssystem zu sein, das oft zu uneinheitlichen Ansätzen mit langwierigen Prozessen führt. Die Qualität und Quantität der existierenden Initiativen im schulischen Bereich sind regional sehr unterschiedlich. Wir haben jedoch keine Zeit, das System zu ändern. Um die Kinder und Jugendlichen dennoch frühzeitig für die Technik zu begeistern, müssen wir jetzt handeln. Was fehlt ist unter anderem ein flächendeckendes Netz, ein Informationssystem, zu allen MINT-Angeboten. Es benötigt beispielsweise eine Art freizugängliche Landkarte, die darstellt, welche Initiativen mit welchem Angebot zur Verfügung stehen – am besten international. Auch wäre ein umfangreicher Webshop hilfreich, der jegliches technisches Lehrmaterial vereint. So wissen die Lehrer, wo sie welches Angebot finden und die Hürde, den Kindern im Unterricht MINT beizubringen (lassen), könnte verringert werden. Derzeit arbeiten wir an einer intelligenten Verschaltung von besonders aktiven Initiativen im MINT-Bereich, um gemeinsam eine höhere Schlagkraft und Umsetzungsgeschwindigkeit zu erreichen.

Fachkräftemangel

Deutschland steht nicht alleine da. Auch im Ausland sehen wir ähnliche Problematiken im Bildungssystem. Der Ruf nach einem „europäischen Masterplan", der dem MINT-Fachkräftemangel entgegenwirkt, wird lauter. Mit dem internationalen Projekt „Unleash new tech talents in Europe" soll ein erster Meilenstein dazu gelegt werden. Ziel dieses Projektes ist es, insgesamt 100.000 Kids'Young Talents, also Kinder und Jugendliche im Alter von 6-18 Jahren sowie junge Erwachsene zwischen 18 und 25 Jahren, für neueste Technologien, die man zur Bewältigung der Digitalisierungskrise und zur Eindämmung des Klimawandels benötigt, zu begeistern. Daraufhin sollte eine umfängliche und praxisgerechte Ausbildung erfolgen. Initial sind bereits mit Deutschland, Österreich, Schweiz, Spanien und Italien fünf Länder an Board. Die Initiative soll in den kommenden Jahren sukzessive ausgebaut werden und letztendlich mindestens zehn europäische Länder, unter anderem Polen, Großbritannien, Serbien, Ungarn und Albanien umfassen.

In diesem Jahr konnten bereits die ersten 10.000 Kinder und Jugendliche mit dem MINT-Virus infiziert und für Technikbegeistert werden. Nach dem Schneeballprinzip sollen dann im zweiten Jahr bereits 30.000 Kinder und Jugendliche eine grundlegende Technikausbildung erfahren haben. So erreichen wir in den kommenden drei bis vier Jahren nahezu 100.000 Kinder, die sich für Technik interessieren.

Autor:
Dr. Rainer Stetter
Geschäftsführer der ITQ GmbH und Gründer der Gerda Stetter Stiftung „Technik macht Spaß!"
ITQ GmbH
www.iqt.de

VHS LEGO Mindstorms Workshop in Garching

Source: PC & Industrie Magazine, October 21, 2024

DIGITAL FACTORY JOURNAL

06.11.2024 / News / Qualifizierung & Standardisierung

SPS-Makeathon 2024
MINT-Action im Schnelldurchlauf

Die Herausforderungen durch Fachkräftemangel, Digitalisierung und Automatisierung verlangen nach neuen Ansätzen, um junge Menschen für MINT-Berufe zu begeistern. Ein Projektteam aus der ITQ GmbH, dem New Automation e.V. und der Messe Nürnberg bringt deshalb das Konzept des Smart Green Island Makeathons in einem eigenen SPS-Makeathon auf die internationale Automatisierungsmesse.

Teilnehmerinnen und Teilnehmer des Smart Green Island Makeathons erarbeiten innovative Prototypen für eine nachhaltige Zukunft. (Quelle: ITQ GmbH)

Source: Digital Factory Magazine, November 06, 2024

VDI nachrichten

Messe SPS 03. Nov 2024 Von Martin Ciupek Lesezeit: ca. 7 Minuten

SPS 2024: Auch autonome Systeme brauchen Menschen

Automatisierung kann bei Fachkräftemangel in der Produktion teilweise helfen. Dennoch wirbt die Branche auf der Messe SPS um junge Talente – aus gutem Grund.

Spaß an Automatisierungstechnik vermittelten auf der Messe SPS in der Vergangenheit bereits einzelne Aussteller. Mit einem neuen Konzept sollen junge Talente jetzt noch stärker zum Mitmachen animiert werden.
Foto: Mesago / Arturo Rivas

Source: VDI Nachrichten Magazine, November 03, 2024

computer & automation

Makeathon

Junge Talente im Visier

Für Studenten findet auf der Messe erstmals ein »Makeathon« statt, in dem die jungen Talente an allen drei Messetagen in Hands-on-Workshops à 2,5 Stunden Prototypen konzipieren und erstellen. Organisator Dr. Rainer Stetter, CEO ITQ, erläutert die Motivation für diese Aktion.

Beispielbild Makeathon. © ITQ

Herr Stetter, dieses Jahr findet auf der SPS erstmalig ein Makeathon statt. Wie kam es zu dieser an die Studenten gerichteten Aktion?

Firma ITQ. Der Leiter der New Automation, Hubert Romer, war im März 2024 bei unserem größten Makeathon in Gran Canaria mit knapp 600 Teilnehmer und hat nach seiner Rückkehr der Messeleitung begeistert berichtet und die Mesago überzeugt, ein ähnliches Konzept auch auf der SPS zu realisieren.

Welche Absicht verfolgen Sie mit dem Makeathon?

Wir versuchen den Kontakt zwischen Schulabgängern und Studierenden sowie den auf der Messe ausstellenden Unternehmen zu intensivieren. Viele Unternehmen sind auch trotz der aktuellen schwierigen

Source: Computer Automation Magazine, November 12, 2024

sps
smart production solutions

PUBLISHED BY computer & automation

NOVEMBER 12

THE OFFICIAL DAILY

Die Zukunft anpacken

Heute öffnet die SPS – Smart Production Solutions für drei Tage ihre Tore! Begleitet wird der Branchentreff der Automatisierungstechnik von zahlreichen Aktionen, darunter ein Makeathon sowie ein Young Talents Day.

„Automatisierungsbranche mit konjunktureller Delle bei intakten langfristigen Trends", so fasste Steffen Winkler, CSO der Business Unit Automation bei Bosch Rexroth und Vorsitzender des Ausstellerbeirats der SPS, die konjunkturelle Lage im Rahmen der Vorpressekonferenz zusammen. Trotz des schwierigen Umfelds und einer parallel in München stattfindenden Electronica sind die Veranstalter positiv gestimmt. Mit rund 1200 erwarteten Ausstellern auf rund 125.000 m² Ausstellungsfläche (2023: 1229 Aussteller auf 128.000 m²) bewegt sich die diesjährige Messe auf Vorjahresniveau. „Es gibt kein Fragezeichen an der SPS", ordnet Martin Roschkowski, Geschäftsführer der Mesago Messe Frankfurt, die Situation ein. „Zwar gäbe es konjunkturell bedingt bei manchen – vor allem deutschen – Unternehmen Anpassungen an der Standfläche, aber generell sei man mit der Situation zufrieden.
Der Anteil an internationalen Ausstellern liegt auch in diesem Jahr bei rund 40 %. Im vergangenen Jahr lag der Anteil ausländischer Aussteller bei 38 %; 71 % davon kamen aus Europa, angeführt von Italien (17 %), Österreich (6 %) und der Schweiz (6 %). Den größten Anteil nach Ländern hatte jedoch mit 26 % China. „Chinesische Unternehmen haben die Copy-Ära verlassen", so Winkler. „Zwar finden sich die größten Abnehmer chinesischer Produkte noch immer in China selbst, doch sehen sich die Unternehmen nach neuen Märkten außerhalb Asiens um und entwickeln sich zu ernstzunehmenden Wettbewerbern.
Es bleibt abzuwarten, welche Innovationen auf den Ständen der chinesischen Unternehmen zu sehen sein werden.

Sonderaktionen zur SPS 2024

In Bezug auf die Hallenaufteilung gibt es eine Anpassung: Der Ausstellungsschwerpunkt „Sensorik und Systemlösung" wächst und ist nun auch in Halle 6 vertreten. Neben der ‚Technology Stage', dem gemeinsam von ZVEI und VDMA betreuten Forum, gibt es Foren in den Halle 1, 6 und 8. In Halle 8 werden sich Start-ups präsentieren, dort befinden sich auch die Gemeinschaftsstände für junge Unternehmen: Im Rahmen der ‚Start-up Area' präsentieren internationale Start-ups ihre Lösungen rund um die Automatisierungstechnik von morgen, der Gemeinschaftsstand ‚Young Innovators' wird vom Bundesministerium für Wirtschaft und Klimaschutz (BMWK) gefördert. Dort finden sich junge Unternehmen mit Sitz und wirtschaftlicher Tätigkeit in Deutschland, die neue oder verbesserte Produkte, Verfahren und Services entwickelt haben.
Der Gemeinschaftsstand ‚Automation meets IT' ist in Halle 6 zu finden. Rund 20 Aussteller präsentieren dort ihre Lösungen rund um IT-Management in der Fertigung, Cloud- und Edge-basierte Lösungen und Services, Security-Maßnahmen, Open Source sowie IoT- und KI-basierte Lösungen. ▷

Young Talents in Focus

Together with ITQ and ZVEI New Automation, Mesago Messe Frankfurt is organising a Makeathon aimed at students. Hands-on workshops lasting 2.5 hours will be held in the mornings and afternoons on all three days of the trade fair, in which prototypes will be designed and created. There will be three groups with a maximum of ten students per workshop. Interested parties can follow the workshops live in the passageway between Hall 1 and Hall 3C. On November 14, the »Young Talents Day« will take place with guided tours, during which companies can present themselves as potential employers to young professionals and students.
At the same time, the »Career Day powered by YDs« will take place in Hall 8, Booth 301. In addition to career counselling, there will also be a speed dating session to establish contacts. ▷

Co-published by: INDUSTRIAL Production · KUNSTSTOFF MAGAZIN · materialfluss

Source: Computer Automation SPS Official Daily Magazine, November 12, 2024

computer & automation

Am Freitag, den 27. Juni 2025, wird die Automatica zum Schauplatz für junge Technikbegeisterte und zukunftsorientierte Talente. In Kooperation mit der Messe dem VDI Verlag und der Gerda Stetter Stiftung – Technik macht Spaß! bietet ITQ e vielfältiges Programm für Schülerinnen, Schüler, Studierende und wechselwillige Professionals.

In interaktiven Technik-Workshops haben Jugendliche ab zehn Jahren die Möglichkeit, spielerisch in die Welt d Robotik, Programmierung und Automatisierung einzutauchen – ob beim Programmieren der 'Lego Mindstorms EV3' Roboter, dem kleinen blauen Roboter 'Karl' von Medion, dem 'TI-Innovator Rover' von Texas Instruments oder der virtuellen 'Minecraft'-Zukunftsstadt vom Fraunhofer IAO. Auch zukunftsrelevante Themen wie regenerative Energien und Open-Source-Innovationen aus dem EU-geförderten Projekt EduDemoS stehen m auf dem Programm. Die Teilnahme ist kostenfrei.

Für Studierende gibt es den Automatica Makeathon: In nur sechs Stunden entwickeln Teams der Technischen Hochschule Augsburg funktionale Prototypen und kreative Lösungen, fachkundig begleitet von erfahrenen Professoren und Ingenieuren von ITQ.

Source: Computer Automation Magazine, June 12, 2025

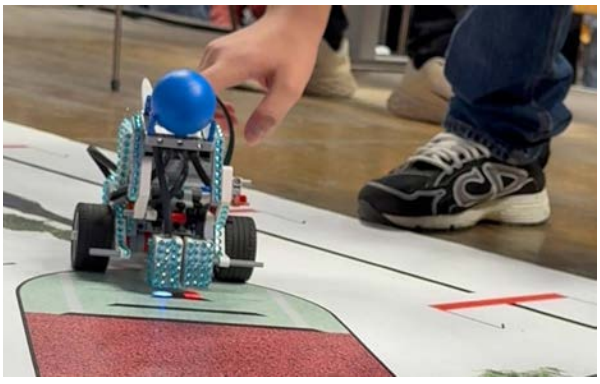
radio duisburg

Studioblog Spannende Duelle bei den "RobOlympics"

Spannende Duelle bei den "RobOlympics"

Veröffentlicht: Freitag, 31.01.2025 09:49

Schülerwettbewerb "RobOlympics": Rund 110 Schüler aus fünf Duisburger und Mülheimer Schulen ließen ihre selbstgebauten Roboter gegeneinander



© Radio Duisburg

Acht Wochen lang wurde getüftelt und programmiert, bis die Roboter einsatzbereit waren – und gestern (30. Januar 2025) war es endlich so weit: Die "RobOlympics" haben an der Universität Duisburg-Essen stattgefunden. Insgesamt nahmen 110 Schülerinnen und Schüler aus fünf Schulen in Duisburg und Mülheim teil. Sechs Teams sind dann mit ihren selbstgebauten Robotern in vier anspruchsvollen Disziplinen gegeneinander angetreten.

Besonders gefragt waren präzise Programmierung und geschickte Steuerung. Beim "Hindernislauf" mussten die Roboter einer markierten Linie auf einem speziell vorbereiteten Spielfeld folgen, exakt an bestimmten Punkten stoppen und sich gegebenenfalls um die eigene Achse drehen.

Lego Baukästen als Grundlage

Die Lego „Mindstorms Roboter"-Baukästen haben als Grundlage für den Bau und die Programmierung der Roboter gedient. Auf dieser Basis führten insgesamt 14 Mechatronik-Studierende die Schüler in die Kunst des Robotterbaus und der Programmierung ein. In der achtwöchigen Vorbereitungszeit konnten die Studierenden in die Rolle von Teamleitern schlüpfen. Gleichzeitig erhielten die Schüler erste praktische Einblicke in die Programmierung und hatten die Gelegenheit, spezifische Fragen zum Studium zu stellen.

„Wir mussten viele Fehler beheben und viel ausprobieren", erzählt Finn, ein Sechstklässler von der Justus-von-Liebig-Schule.

Source: Radio Duisburg News, January 31, 2025

HIGHTECHBOX

Techniklust statt Nachwuchsfrust – ITO fördert Jugendliche auf der automatica

Am Freitag, den 27. Juni 2025, wird die automatica – die Leitmesse für intelligente Automation und Robotik – zum Schauplatz für junge Technikbegeisterte und zukunftsorientierte Talente. In Kooperation mit der Messe München, dem VDI Verlag und der Gerda Stetter Stiftung – Technik macht Spaß! bietet die ITQ GmbH ein vielfältiges Programm für **Schülerinnen, Schüler, Studierende und wechselwillige Professionals.**

Auf der **automatica 2025** wird Technik erlebbar! In interaktiven **Technik-Workshops** haben Jugendliche ab 10 Jahren die Möglichkeit, spielerisch in die faszinierende Welt der Robotik, Programmierung und Automatisierung einzutauchen. Ob beim Programmieren der LEGO Mindstorms EV3 Roboter dem kleinen blauen Roboter KARL von Medion, dem TI-Innovator Rover von Texas Instruments oder der virtuellen Minecraft-Zukunftsstadt vom Fraunhofer IAO – hier wird Technik zum Abenteuer. Auch zukunftsrelevante Themen wie regenerative Energien und Open-Source-Innovationen aus dem EU-geförderten Projekt EduDemoS stehen mit auf dem Programm. Die Teilnahme ist kostenfrei.

Für Studierende heißt es beim **automatica MAKEATHON**: Ärmel hochkrempeln und loslegen! In nur sechs Stunden entwickeln Teams der Technischen Hochschule Augsburg funktionale Prototypen und kreative Lösungen – fachkundig begleitet von erfahrenen Professoren und Ingenieuren der **ITQ GmbH**.

Das alles findet unter dem Dach des **automatica Nachwuchs- und Karrieretages** statt. Hierzu sind alle eingeladen, die sich beruflich orientieren oder frisch durchstarten möchten. Im direkten Austausch mit namhaften Unternehmen der Automatisierungs-branche entstehen wertvolle Kontakte. Ob für ein Praktikum, den Berufseinstieg oder den nächsten Karriereschritt – der Nachwuchs- und Karrieretag bringt junge Talente mit innovativen Unternehmen zusammen – praxisnah, inspirierend und mit jeder Menge Begeisterung für Technik.

Source: High Tech Box Magazine, June 13, 2025

Press Review

INFORMATIONEN

Technikbegeisterung statt Fachkräftemangel – wie Makeathons Europa verändern

Von Gran Canaria bis Wilhelmshaven: Warum Bildung neu gedacht werden muss – und wie sie wirklich wirkt

Der europäische Arbeitsmarkt steht unter Druck: Der anhaltende Fachkräftemangel, besonders in den technischen Berufen, bedroht die Innovationskraft vieler Länder. Allein in Deutschland fehlen laut Institut der deutschen Wirtschaft rund 387.100 Fachkräfte in MINT- Berufen – Tendenz steigend (Quelle: IW Köln, MINT-Frühjahrsreport 2025). Zugleich büßt das Bildungssystem an Attraktivität ein. So zeigt das MINT Nachwuchsbarometer 2023 von Stifterverband und McKinsey, dass die Zahl der MINT-Studierenden in Deutschland seit 2017 kontinuierlich sinkt.

Doch es gibt auch Lichtblicke. Bildungsformate wie sogenannte Makeathons (Make + Marathon) zeigen eindrucksvoll, wie praxisnahe Bildung wirken kann. Bei den Makeathons entwickeln junge Menschen in nur wenigen Stunden interdisziplinäre Lösungen für die Digitalisierung und reale Industrieprobleme. Dabei wird eine Energie freigesetzt, die in manchen Hörsälen wünschenswert wäre. Und die jungen Leute beweisen, wie viel Potenzial in ihrer Generation steckt, wenn man sie einfach machen lässt. Denn diese junge Generation will lernen und ihre Zukunft in die Hand nehmen. Es ist die Pflicht der erfahrenen Unternehmen, ihr das Lernen zu ermöglichen.

SMART, GREEN, GLOBAL: DER MAKEATHON ALS BILDUNGSMODELL

Ein internationales Vorzeigeprojekt ist der SMART GREEN ISLAND MAKEATHON, initiiert von Dr.-Ing. Rainer Stetter, Geschäftsführer der ITQ GmbH und der Gründer der Stiftung „Technik macht Spaß!". Jährlich versammelt er in Kooperation mit vielen Sponsoren und Bildungseinrichtungen mehrere Hundert Teilnehmende auf Gran Canaria, um gemeinsam die Technik zu erleben. Dieses Jahr folgten fast 1.000 Teilnehmende – von Schüler:innen über Studierende bis zu Industrievertreter:innen – seinem Ruf und entwickelten gemeinsam innovative Prototypen für eine nachhaltige Zukunft. In den vergangenen neun Jahren kamen weltweit bereits über 4.000 Studierende zu über 36 MAKEATHONS in sechs Ländern zusammen.

Der SMART GREEN ISLAND Makeathon auf Gran Canaria lebt von technikbegeisterten Studierenden und engagierten Sponsor:innen.

„Wir müssen aufhören, die Digitalisierung als Problem zu sehen, und anfangen, sie als Lösung zu begreifen – und zwar gemeinsam mit der jungen Generation", so Dr.-Ing. Rainer Stetter. „Ich sehe es als unser aller Verantwortung, nicht nur zu fordern, sondern zu fördern. Unsere Makeathons zeigen: Wenn man jungen Menschen Raum gibt, entstehen Lösungen, die uns alle weiterbringen."

Tatsächlich sind die Ergebnisse beachtlich: Innerhalb von vier Tagen entwickelten im Jahr 2025 über 500 junge Talente aus 36 Ländern rund 22 technische Prototypen – vom autonomen Müllsammelroboter bis zur Bananenfaser-Becher-Maschine. Parallel dazu fanden 23 Technikworkshops für 440 Kinder statt.

VOM ARCHIPEL NACH NIEDERSACHSEN: DER MAKE HEAVEN IN WILHELMSHAVEN

Dass sich dieses Modell auch auf regionale Bildungsinitiativen übertragen lässt, zeigt das aktuelle Beispiel Wilhelmshaven. Medienpädagogischer Berater des Landes Niedersachsen und Berufsschullehrer an der BBS Wilhelmshaven Michael Piossek war 2024 selbst Teilnehmer beim SMART GREEN ISLAND MAKEATHON auf Gran Canaria. Begeistert von der Energie, Kreativität und Wirkung des Formats, brachte er die Idee als Blaupause nach Deutschland zurück – und initiierte mit großem Engagement den ersten Make-HeAVEN-Makeathon an den Berufsbildenden Schulen Wilhelmshaven.

Im April 2025 nahmen über 220 Schülerinnen und Schüler, Auszubildende und Studierende gemeinsam mit Lehrkräften und regionalen sowie überregionalen Partnerunternehmen teil. Gemeinsam

Source: Education and Career Magazine, July 15, 2025

BSCHWABEN.DE

Robolympics 2025

Schüler zeigen ihr technisches Können mit LEGO-Robotern

Teilnehmende der Robolympics 2025 am Technologie Centrum Westbayern – Teams aus vier regionalen Schulen zeigten ihr Können mit LEGO-Robotern.
Bild: Jessica Kießling

Kooperation zwischen Bildung, Stiftung und Wirtschaft

Die Robolympics 2025 wurden durch die enge Zusammenarbeit verschiedener Partner möglich gemacht. Organisiert wurde der Wettbewerb vom und im Technologie Centrum Westbayern in Zusammenarbeit mit der Magdalene-Armin-Richters-Stiftung und der der Gerda Stetter Stiftung.

Die Aufgabenstellung, die Materialien sowie die Leitung des Wettbewerbs übernahm die Gerda Stetter Stiftung „Technik macht Spaß!" mit Amélie Franken und Sebastian Motzet. Unterstützt wurden sie dabei unter anderem vom ITQ-Projektverantwortlichen Michael Enslin und seinem Team sowie von TCW-Mitarbeiter Luca Kienzle.

Source: Donau-Ries-Aktuell Magazine, September 03, 2025

ZVW

WINNENDEN

Aktion an Schule in Winnenden: Lasst die Jungen ran an die Technik!

Schülerworkshop in der Albertville-Realschule, um für technische Berufe zu begeistern.
© Sofiia Shahaievska

Früher wurde es durchaus kritisch gesehen, wenn Firmen in Schulen sichtbar wurden.

Doch hinter dem Projekt „Technik macht Spaß" Schleichwerbung zu vermuten, greift viel zu kurz. Es geht darum beim Nachwuchs das Interesse für technische und digitale Berufe zu wecken.

Folgt man Dr. Rainer Stetter Gründer der Gerda Stetter Stiftung - Technik macht Spaß!, der Gast in der Albert-Ville Schule war, geht es schlicht darum, den Wirtschaftsstandort Deutschland und die hiesige naturwissenschaftliche Ausbildung zu fördern.

Source: ZVW Newspaper Publisher Waiblingen, July 20, 2025

packaging journal

ITQ auf der drinktec: Kreislaufwirtschaft trifft Bildung

Die Circular Society schließt den Kreislauf auf mehreren Ebenen: Wertstoffe werden sinnvoll weiterverarbeitet, während junge Menschen gleichzeitig praxisnahe Kompetenzen in den Bereichen Recycling, Robotik, KI und Future Technologies entwickeln. (Bild: ITQ)

ITQ zeigt auf der drinktec, wie sich Kreislaufwirtschaft mit Bildung verbinden lässt. Am Stand des VDMA stellt das Unternehmen die Vision einer Circular Society vor – eine Gesellschaft, die Ressourcen nicht nur recycelt, sondern daraus Wissen, Kompetenzen und neue Technologien entstehen lässt.

Die Idee fußt auf den Prinzipien Recycle, Rebuild, Reuse und Reskill. Den Grundstein legte das Engineering- und Beratungsunternehmen bereits 2019 mit dem Studierendenprojekt PlastiX, bei dem KI und Drohnen Plastikmüll erkennen und Roboter ihn einsammeln. Heute wird das Projekt konsequent weiterentwickelt – bis hin zur Umwandlung der Abfälle in neue Werkstoffe wie 3D-Druck-Filamente, die in Bildungsprojekten zum Einsatz kommen.

Bildung als Schlüssel

Ein Beispiel ist das EU-geförderte Forschungsprojekt EduDemoS der Stiftung Technik macht Spaß!, bei dem aus Recyclingmaterialien gefertigte Demonstratoren in Schulen und Hochschulen eingesetzt werden.

Source: Packaging Journal Magazine, September 10, 2025

packaging journal

Packaging Valley Makeathon rund um Künstliche Intelligenz im Maschinenbau

Der Packaging Valley Makeathon ging in diesem Jahr bereits in seine fünfte Runde.
(Bild: Packaging Valley Germany)

Der Packaging Valley Makeathon ging in diesem Jahr in seine fün e Runde. 45 Studierende, Technikbegeisterte und Expertinnen und Experten aus aus Unternehmen des Packaging Valley entwickelten kreative Lösungen für eine digitalisierte und nachhaltige Zukunft der Branche. Im Mittelpunkt stand der Einsatz von künstlicher Intelligenz im Maschinenbau.

Dezentral, an den vier Standorten Rommelag Digital GmbH (Karlsruhe), Murrelektronik GmbH (Kirchheim unter Teck), Syntegon Technology GmbH (Crailsheim) und Bosch Rexroth AG (Ulm) kamen interdisziplinäre Teams aus jungen Talenten, Hochschulen, Unternehmen und Technologiepartnern aus dem Verpackungsmaschinenbau zusammen um an Cases zu arbeiten und Ideen zum Leben zu erwecken.

Source: Packaging Journal Magazine, November 05, 2025

MM MaschinenMarkt

SPS Makeathon 2025

Zukunft braucht Freude an Technik!

07.11.2025 · Quelle: Pressemitteilung ITQ · 2 min Lesedauer ·

Die zunehmende Digitalisierung und Automatisierung stellen Unternehmen vor große Herausforderungen – und eröffnen gleichzeitig neue Chancen für junge Talente in den MINT-Berufen. Um diese Begeisterung gezielt zu fördern, findet auf der SPS 2025 erneut der SPS Makeathon statt.

Der SPS Makeathon geht in die 2. Runde und lädt junge Studierende zu spannenden Workshops ein.
(Bild: ITQ)

Im Rahmen der Young Talent Days organisiert die ITQ GmbH gemeinsam mit der Mesago Messe und dem New Automation e.V. den SPS Makeathon. Dann verwandelt sich die SPS in eine Bühne für junge Technikbegeisterte.

Hier können Studierende sowie Berufsschülerinnen und Berufsschüler in interdisziplinären Teams innovative Ideen entwickeln und erste Prototypen umsetzen. Die Workshops finden in der Makeathon Area in Halle 5, Stand 208 statt.

An allen Messetagen finden täglich parallel mehrere zweieinhalbstündige Workshops mit praxisnahen Challenges statt – vormittags und nachmittags, jeweils mit bis zu zehn

Source: Maschinen Markt Magazine, November 07, 2025

konstruktions praxis

SPS Makeathon 2025

Technikbegeistert in die Zukunft

06.11.2025 · Quelle: ITQ · 1 min Lesedauer ·

Digitalisierung und Automatisierung eröffnen neue Chancen in MINT-Berufen. Der SPS Makeathon 2025 fördert gezielt junge Talente und macht die SPS 2025 zur Bühne für interdisziplinäre Teams aus Studierenden und Berufsschülern.

Der SPS Makeathon geht in die 2. Runde und lädt junge Studierende zu spannenden Workshops ein.
(Bild: ITQ)

Die fortschreitende Digitalisierung und Automatisierung bieten sowohl Herausforderungen als auch Chancen für junge Talente in den MINT-Berufen. Der SPS Makeathon 2025, konzipiert von der ITQ GmbH, Mesago Messe und dem New Automation e.V., kehrt auf die SPS - Smart Production Solutions in Nürnberg zurück, um Begeisterung für Technik zu wecken.

Die fortschreitende Digitalisierung und Automatisierung bieten sowohl Herausforderungen als auch Chancen für junge Talente in den MINT-Berufen. Der SPS Makeathon 2025, konzipiert von der ITQ GmbH, Mesago Messe und dem New Automation e.V., kehrt auf die SPS - Smart Production Solutions in Nürnberg zurück, um Begeisterung für Technik zu wecken.

Förderung interdisziplinärer Zusammenarbeit

Vom 25. bis 27. November 2025 treffen sich in der Makeathon Area (Halle 5, Stand 208) Studierende und Berufsschüler. In Teams arbeiten sie in praxisnahen Workshops an innovativen Projekten. Täglich finden mehrere zweieinhalbstündige Workshops mit bis zu zehn Teilnehmenden statt. Insgesamt können rund 180 Nachwuchstalente mitmachen. Gemeinsam mit Experten der Unternehmen Baumüller Nürnberg GmbH, B&R Industrial Automation, Murrelektronik GmbH, SEW-Eurodrive GmbH & Co KG und Turck GmbH & Co. KG.

Source: Konstruktions Praxis Magazine, November 06, 2025

SPS MAGAZIN

SPS Makeathon 2025

Bild: MESAGO Messe Frankfurt GmbH

Ein Projektteam der ITQ, des New Automation e.V. und der Mesago Messe Frankfurt bringen das erfolgreiche Konzept des Smart Green Island Makeathons erneut auf die SPS-Messe: den SPS Makeathon 2025. Studierende sowie Berufsschülerinnen und Berufsschüler können in interdisziplinären Teams innovative Ideen entwickeln und in erste Prototypen umsetzen. Die Workshops finden in der Makeathon Area in Halle 5, Stand 208 statt.

An allen Messetagen finden täglich parallel mehrere zweieinhalbstündige Workshops mit praxisnahen Challenges statt – vormittags und nachmittags, jeweils mit bis zu zehn Teilnehmenden pro Workshop. Insgesamt können rund 180 Nachwuchstalente teilnehmen, die sich über das Mesago-Online-Portal nach dem ‚First come – first served'-Prinzip anmelden. Gruppenanmeldungen sind ebenfalls möglich.

Unterstützt wird der SPS Makeathon 2025 von fünf Unternehmen der Automatisierungsbranche, die reale Aufgabenstellungen und Materialien zur Verfügung stellen: Baumüller Nürnberg, B&R Industrial Automation, Murrelektronik, SEW-Eurodrive und Turck.

Source: SPS Magazine, November 07, 2025

Get on Board!

Become a Technology Sponsor

When the foundation was established in 2011, we had the ambitious vision that every school and kindergarten in Germany would have a technology club by 2021. Much has changed in the meantime in the age of digitalization, but there is still a long way to go before we reach our goal. We already offer our "LEGO Mindstorms" project in many institutions and teach the students technical contexts with a lot of fun to get them excited about science and technology at an early age.

Our concept is to introduce teams of pupils to technical problems in a playful way using the high-tech LEGO Mindstorms construction kit. The organizational and technical leadership of these teams is taken over by students selected and trained by us. Fun and play are never neglected. To ensure that the teams are not just "playing" but are actually working in a focused and concentrated manner, the foundation repeatedly supports selected teams in their participation in competitions such as the First LEGO League or the international robotics competition World Robot Olympiad. This year, we supported pupil teams in five national and international competitions and were even able to send two teams from the Bavarian Ottobrunn High School to the World Finals in Detroit and Montevideo.

To push this concept further, we are always looking for companies that, together with us or on their own initiative, build up and support further school teams and enable them to participate in specially organized competitions.

If you as a sponsor, company or private person, would like to support the activities of the Gerda Stetter Foundation with financial means, donations of materials and its influential network, please feel free to contact us.

On behalf of a new technophile generation, we are happy about every commitment!
If you want to donate money, we will give you a donation receipt.
The Foundation is recognized as a non-profit organization by the government
of Upper Bavaria (Foundation-Number: 12.1-1222.1 M/T 24).
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THANK YOU!

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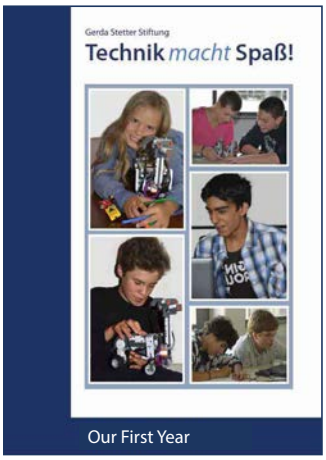
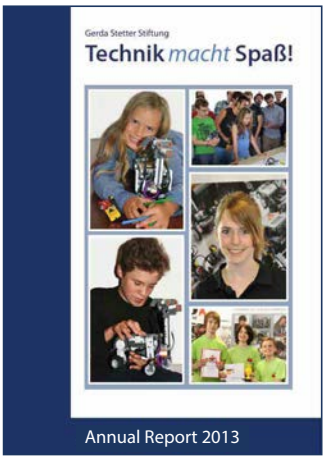
Edition Review – What we did so far

Our Goal is to teach Education 4.0 with a lot of Enthusiasm ...

Front Cover – Event Highlights 2012 – 2024



Our First Year



Annual Report 2013

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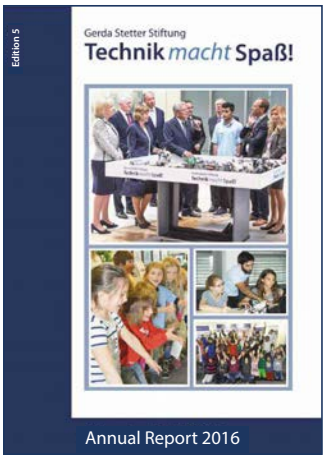

Annual Report 2016

Annual Report 2017

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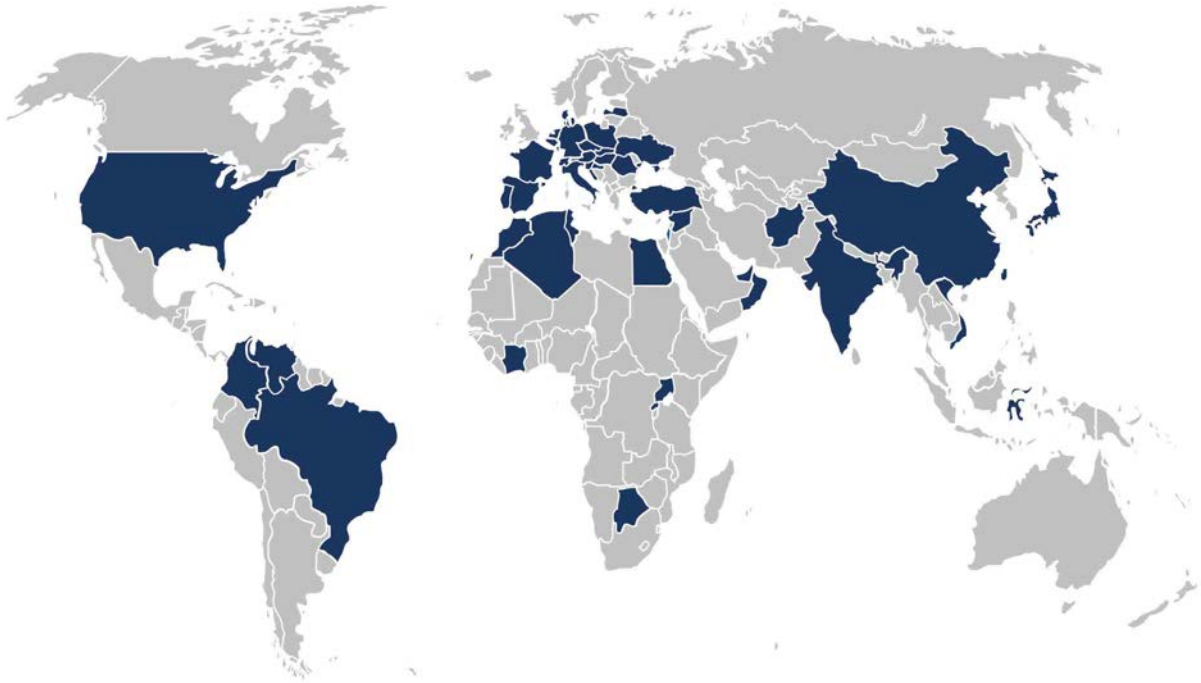
... and we have achieved a lot so far

Network 2012 – 2024

Our Network



Foundation Administration „Technik macht Spaß!“ | Parkring 4 | D-85748 Garching near Munich
Phone: +49 89 321981-70 | Fax: +49 89 321981-89 | E-Mail: info@technikmachtspass.org

www.technikmachtspass.org