

Tech Talent Program

Kick-Start Your Career in Tech

Apply before 15 Oct 2024
www.motionlab.berlin

Learn more



What is the Tech Talent Program?

Theory or practice?

Why choose when you can have both by joining our Tech Talent Program!

MotionLab-Berlin's Tech Talent Program is a 10-week program tailored for bachelor's and master's students in Berlin and Brandenburg, studying computer science, coding, machine learning, IoT, engineering, or business development.

The program offers hands-on experience, practical skills, and engaging projects to work on in collaboration with forward-thinking companies and top industry experts. It's designed to enhance your career prospects by helping you apply your knowledge in a practical setting.

* CHALLENGES

Work on real-world projects and tackle real industry challenges. Receive support and mentorship from top industry experts.

* WORKSHOPS

Participate in interactive sessions, hands-on workshops, and inspiring events. Transform your theoretical knowledge into practical experience.

* PROTOTYPING

Enjoy free access to our prototyping machinery, coworking space, and makerspace. Learn to use 3D printing, electronics, laser cutters, and other MotionLab.Berlin facilities.

* NETWORKING

Connect with future employers, including forward-thinking companies, and corporate partners. Join an exclusive high-profile scouting pool.



10-Week Program Overview

Our Tech Talent Program emphasizes hands-on learning and a collaborative approach, where you'll work directly with industry experts to solve a practical challenge that you select as part of your application.

Over 10 weeks, you'll gain the skills and confidence to continue developing your potential as a promising young professional in IoT prototyping and related fields.

Here's what you can expect:

* 2-WEEK BOOT CAMP

Build essential skills through hands-on workshops in 3D printing, laser cutting, design thinking, agile project management, prototyping, and more. Refine ideas into projects while learning IoT use case management and effective skillset allocation.

* 7-WEEK PROJECT WORK

Dive deep into the challenge you applied for, working closely with a team of industry experts. This includes project work, input sessions, and personalized mentoring with your project team. Benefit from keynotes, additional workshops, and masterclasses, all designed to enhance your skills throughout the challenge.

* GRADUATION DAY

Present your project in front of the jury, community members, and our extended network. Get an official certificate from BMWK, de:hub, and MotionLab.Berlin, and join our alumni network.



This Is Who We're Looking For

The Tech Talent Program connects ambitious bachelor's and master's students with forward-thinking companies from the MotionLab.Berlin ecosystem, working on innovative hardware solutions for a greener, more sustainable future. This 10-week program offers hands-on experience, skill development, and collaboration with industry leaders in IoT, machine learning, and engineering, allowing students to apply their knowledge while contributing to impactful projects.

We also accept applications from teams of up to 5 people who can apply together, provided that all team members select the same challenge to work on.

Apply here by 15 October 2024 if you meet the following criteria:

* YOU'RE A STUDENT

You are a bachelor's or master's student at a university in Berlin or Brandenburg (bachelor's students should be at least in their 4th semester).

* YOUR FUTURE DEGREE IS...

You are studying computer science, coding, machine learning, IoT, engineering, or business development.

* YOU'RE FULLY COMMITTED

You are committed to participating in the boot camp, workshops, and tackling a challenge during the 10-week program.

* NOT SURE THIS IS FOR YOU?

Not sure if you're a perfect fit for the Tech Talent Program? Go ahead and apply anyway!

To apply, please choose the team and the challenge you want to work on and fill out this short form before 15 October 2024.



Challenge #1: Blue Skies Minerals Monitor and Control a Chemical Precipitation Process

Blue Skies Minerals stores CO₂ safely and permanently in mines. The process stabilizes mining waste, bringing environmental and financial benefits for the mining operations.

Students will contribute to a large-scale climate-tech solution. They will start by learning about the chemistry involved and have maximum freedom to explore on a maker level. As the project progresses, they will transition to developing an industrial process control hardware solution. We are always on the lookout for talented individuals with a proactive, results-driven mindset.

* THE CHALLENGE

Carbon dioxide is mineralized through a precipitation reaction. Several parameters, such as temperature, pH, gas flow, conductivity, and turbidity, can be measured and controlled.

The mineralization of CO₂ is a crucial step for safely and permanently storing this greenhouse gas underground or on the surface of mines. Given the large scale of the process, attention to detail is essential. The process must be closely monitored and adjusted in real-time, with sensor data logged and visualized, and actuators such as valves, pumps, and stirrers controlled.

The insights and results from this challenge will be integrated into a prototype used to refine and optimize our process and to communicate our approach to customers and investors.

* YOUR MENTOR(S)

Silko Barth, a physicist, engineer, and maker who loves to test, build, and break things through well-planned yet fun experiments.

Challenge #2: SPAIA Biodiversity—All Day and All Night

SPAIA, a Berlin-based startup, advances biodiversity monitoring through innovative insect data collection. Using cutting-edge sensing technology and AI, SPAIA analyzes insect activity and biomass—key ecosystem health indicators. Their mission is to fill global insect data gaps, starting with business land managers and governments. SPAIA collaborates with Fraunhofer IZM and Harper Adams University, the UK's top agricultural institution.

Students should apply to develop a sustainable mindset while solving complex global problems. You'll learn to combine technical skills with ecological awareness and user-centered design, creating impactful solutions. This challenge is about more than powering a device—it's about applying sustainability in real-world contexts.

* THE CHALLENGE

There is a growing gap in global insect data, despite the alarming decline in insect populations. Insects are vital to ecosystems, serving as indicators of environmental health and aiding in pollination and decomposition. The lack of comprehensive data limits our ability to address this decline effectively.

Our technology fills this gap with affordable, accessible tools for monitoring insect activity and ecosystem health. By capturing data from diverse environments, our devices help businesses, researchers, and governments make informed conservation decisions.

Our devices must work reliably in diverse environments, from the Amazon rainforest to urban parks like Kreuzberg.

Filling this data void is crucial for developing strategies to combat insect decline and protect biodiversity, ensuring a healthier environment for future generations.

Your task would be to design a modular power solution, with a separate enclosure that supplies 5V via USB, ensuring 24/7 operation. This innovation will support biodiversity research and environmental monitoring, impacting both natural and urban ecosystems.

* YOUR MENTOR(S)

Tom Cox has over 15 years of experience as a creative technologist, using technology to connect people with the world around them. His work ranges from interactive Nike installations to touch-sensitive Coca-Cola cans, blending creativity with technology. He's also developed software for monitoring the world's largest managed wild bee population and will guide you through rapid iteration and experimentation to find real-world solutions.

Collette Wasielewski is an award-winning creative strategist with over 20 years of experience building brands for global companies like Coca-Cola, Virgin Mobile, and Toyota. Now active in Berlin's startup scene, she helps students understand how design thinking and strategy drive success.

Challenge #3: VoltVogel Modular Chassis Design and Development

VoltVogel's mission is to accelerate the transition to a sustainable future by revolutionizing the adoption of carbon-neutral mobility. We are committed to providing reliable, convenient, and safe EV charging systems that use renewable energy to power the mobility of tomorrow.

Students should apply for this project as it offers a unique opportunity to work on cutting-edge technology at the intersection of robotics, mechanical engineering, and sustainable energy. By participating, you'll gain hands-on experience in designing and prototyping real-world systems, with a focus on the rapidly growing field of Autonomous Mobile Robots (AMRs) for outdoor applications.

* THE CHALLENGE

This project is important because it tackles the challenges of deploying Autonomous Mobile Robots (AMRs) in outdoor environments, such as parking lots with varying surfaces and uneven terrain. With the growing demand for flexible, mobile EV charging solutions, developing a robust, modular chassis with effective vibration damping is crucial for ensuring system reliability and longevity.

The project advances AMR technical capabilities and contributes to the broader goal of scalable, sustainable solutions for electric vehicle infrastructure. It also offers valuable hands-on experience in multidisciplinary engineering, preparing the team for real-world challenges in robotics, mechanical design, and materials science.

Your task would be to design and prototype a scaled-down modular chassis for an outdoor Autonomous Mobile Robot (AMR) application in parking lots with varying surfaces and unevenness. The chassis must support different battery configurations and include a suspension system to mitigate vibrations. Deliverables include a 3D-printed prototype, CAD designs, material recommendations, and a detailed suspension analysis report.

* YOUR MENTOR(S)

Abhishek Nair is a mentor and advisor with a diverse background in mechanical engineering, robotics, and AI.

His experience includes developing hardware and software for Autonomous Mobile Robots (AMRs) and successfully deploying them in outdoor applications. He has also worked on automated testing rigs using AI and robotics and contributed to AI services for a climate tech startup.

Currently, Abhishek is the founder of VoltVogel, where he leads innovation in the EV charging sector.

Challenge #4: NanoMatter

Creating an Open-Source Physics-Informed Machine Learning Platform for High-Speed Semiconductor Manufacturing

NanoMatter is transforming semiconductor manufacturing by addressing yield loss, which costs fabs up to \$1 billion annually. Using Physics-Informed Machine Learning (PIML), our platform optimizes production lines by detecting and resolving equipment anomalies in real time.

This challenge offers hands-on experience with Physics-Informed Machine Learning (PIML) and Digital Twins. Students will master integrating physical principles with AI, explore real-time optimization with Digital Twins, and understand the economic impact of Industry 4.0 technologies. It provides a comprehensive skill set in technical, practical, and economic aspects of industrial manufacturing.

* THE CHALLENGE

The advanced material deposition sector faces critical issues like maintaining deposition homogeneity, reducing defects, and controlling particle formation due to complex interactions between equipment parameters and physical processes.

NanoMatter addresses these challenges with AI-enabled software that combines physics knowledge and data science through Physics-Informed Neural Networks (PINNs). By integrating physical principles with empirical data, our approach improves accuracy and reliability in semiconductor manufacturing. Students in this challenge will develop a PINN tailored to semiconductor manufacturing, addressing real-world issues.

The project involves: Problem Identification, Seed Data Utilization, Neural Network Architecture, Loss Functions, Optimization Methods.

This challenge offers hands-on experience in integrating machine learning with physics for solving semiconductor manufacturing problems.

* YOUR MENTOR(S)

NanoMatter Technologies, founded by Dr. Mithun Parambath, Dr. Antony George, Dr. Emad Najafidehaghani, Cyril-Patrick Fernandez, and Dr. Anil Gandhi, is revolutionizing semiconductor manufacturing. The team, with deep expertise in semiconductor production and data science, addresses yield loss through advanced machine learning and physics-based models.

- **Cyril-Patrick Fernandez:** Former Technology Transfer Manager at Texas Instruments, expert in yield management.
- **Dr. Antony George:** Pioneer in 2D materials and CTO, driving R&D in semiconductor technology.
- **Dr. Anil Gandhi:** Data scientist with extensive experience in yield and process optimization.
- **Dr. Emad Najafidehaghani:** Expert in semiconductor manufacturing processes and COO.
- **Dr. Mithun Parambath:** CEO with a blend of scientific and business expertise, leading innovation in semiconductor manufacturing.

Together, they push the boundaries of semiconductor technology, enhancing manufacturing efficiency and solving complex industry challenges.

About MotionLab.Berlin

At MotionLab.Berlin, we believe that the next significant change won't come from an app but from innovative hardware. That's why we're committed to helping hardware startups achieve the same level of success as software startups. Our aim is to build a better and more sustainable future through groundbreaking technology from talented founders.

As a hardtech innovation hub and ecosystem, MotionLab.Berlin offers the space, expertise, and network needed to develop cutting-edge hardware solutions. We believe every great idea deserves the opportunity to make a positive impact on the world.

We know that transforming the world requires collaboration, which is why we partner with forward-thinking businesses, researchers, and policymakers to drive innovation together.

* THE TECH TALENT PROGRAM FOR BERLIN & BRANDENBURG



* PROGRAM PARTNERS

