Iheb Mrabet

born on: August 15, 1998
Adresse: Waldemarstr.16 18057, Rostock
Nationality: Tunisian
Tel: 0151-12704266
Email: ihebmrabet0@gmail.com
Linkedin: www.linkedin.com/in/iheb-mrabet

I'm a practice-oriented electrical engineer who bridges the gap between mechanical design and intelligent software. My expertise spans the entire process chain: from CAD design and the practical production of prototypes (3D printing, soldering, assembly) to high-level programming of robotic applications (robotics, AI, TwinCAT, Python, C++). This rare combination of hardware expertise and software depth enables me to develop holistic and robust automation systems from the ground up.

Professional experience and projects

Student assistants in the field of factory, work organization and industrial robots *Nov 2021 – Sept 2023 and Oct 2024 – today*
Fraunhofer Institute for Large Structures in Manufacturing Technology IGP *Rostock, Deutschland*

- Design and development of a compiler and a specialized development environment using RoboDK for translating and offline programming of Blastman robot programs. The goal was to significantly reduce commissioning times and simplify programming for specialist personnel (for Liebherr).
- Responsible for the technical design and implementation of a semi-automatic system in which a robot performs the precise joining of pipe components ("pipe fitting" for shipbuilding) for subsequent welding processes (Penelope)
- Participation in the project planning of a plastic plasma curing robot-automated system for process acceleration
- Participation in the development of a robot-automated welding system for Airbus aircraft
- Development of a hand-held control device for KUKA robots: Design and development of a comprehensive control system and motion algorithms in ROS2 for intuitive manual control of the robot. Responsible for the complete integration of relevant sensors and actuators as well as the development of the necessary interfaces to ensure responsive and precise control (RoboFlex).
- Development of a 3D robotic milling machine for wood: Implementation of the higher-level control system to automate the entire milling process. Development of a robust data exchange algorithm that ensures seamless, real-time communication between the KUKA robot, a downstream PLC, a central database, and an external app, thus enabling a seamless digital production process (Woodbot).

Bachelor thesis *Dec 2024 – Jun 2025*
University of Rostock + Fraunhofer Institute *Rostock, Deutschland*

- Development of an AI model for 6D pose estimation using RGB-D measurement data for custom Objects

Working Student – AI & Software Development *January 2024 – June 2024*
B-T-L.ai *Giessen, Germany*

- Development and implementation of AI solutions for marketing, content creation and task automation
- Creating an AI-based GDPR compliance check for websites

Bachelor thesis *May 2023 – Dec 2023*
University of Rostock + Fraunhofer Institute *Rostock, Deutschland*

- Development of an automated robot palletizing solution with machine learning for object recognition, gripping and trajectory planning

Mechatronics Project *Mar 2022 – Oct 2022*
University of Rostock + Fraunhofer Institute *Rostock, Deutschland*

- Reverse engineering: Automated creation of CAD models from measurement data using machine learning and Python software

Freelancer *Oct 2019 – Today*

- Creation of a chatbot as a nutrition assistant for fitbynature.ai
- Design and development of websites for various private clients: @CertoFotografie and Favolivia
- Social media content management and Facebook ad creation for @decoration.artistou and @parabio2020

Education

University of Rostock, Rostock, Germany
Bachelor of Science (B.Sc.) in Electrical Engineering
October 2023 – June 2025
Bachelor thesis: "Implementation and testing of methods for 6D pose estimation from RGB-D measurement data"

University of Rostock, Rostock, Germany
Bachelor of Science (B.Sc.) in Mechatronics
October 2019 – September 2023
Bachelor's thesis: "Development of an automated robot palletizing solution using machine learning for object recognition, gripping, and trajectory planning"

GLS Language Center, Berlin, Germany
Language course C1 German
November 2018 – March 2019

The Manar Preparatory Institute for engineers, Tunisia
Engineering preparation cycle
October 2017 – June 2018

Ibn Khaldoun High School, Tunis, Tunisian
Abitur (general higher education entrance qualification)
September 2014 – June 2017
Focus: Mechatronics (high school diploma + practical tests in mechanical and electrical engineering)
Top high school student

Language skills (Rating from 1 to 5, with 5 being the highest level of competence)

Language	Read	Speak	Write
Arabic	native language		
French	5	4,5	4,5
English	5	5	4,5
German	5	4,5	4
Chinese	1,5	1	1

Further training and events

Junior Consultant: Onboarding project, project management software research and various trainings and events — Mar 2023 - *Today*

Competitions and certificates:

- Kreati case study competition (2nd place in the preliminary round and 4th place in the semifinals) — Jun 2023
- "Project Management: The Basics for Success" Kurs auf Coursera — *Mar 2021*
- "Brand Management: Aligning Business, Brand and Behaviour" Kurs auf Coursera — *Jan-Apr 2020*
- Startup Weekend Competition: Start-up development with the project ”EchriTounsi" — *Oct 2017*
- English General Course at AIESEC — *Feb - Apr 2017*
- Global Game Jam Competition: Game Development at the Tek-Up University — *Jan 2017*
- BIAT Bank ideas competition for entrepreneurs — *Nov 2016*
- SolidWorks software course, Mechatronic Association Hammamet — *Aug 2016*
- Scientific training with various workshops and main project in virtual reality: "Smart Education" at Youth for Science — *Aug 2016*
- *Jul - Aug 2016*

Further training at Fraunhofer IGP:

- Export Control — *Feb 2025*
- Fundamentals of Data Protection — *Feb 2025*
- QM General ISO 9001 — *Feb 2025*
- Handling hazardous substances at the IGP — *Feb 2025*
- Basic Training on Corruption Prevention — *Feb 2025*
- CATIA V5 + 3D Printing Training — *Nov 2024*

Technical knowledge

Software & Tools:

- **MS Office:** Word, Excel, PowerPoint
- **Robotics & Simulation**: ROS2, MuJoCo, RoboDK, Unity, KUKA (KRL), Universal Robots
- **Programming**: Python, C++, C, JavaScript, SQL, Pascal; OpenCV; REST, MQTT, TCP/IP; Git, Linux
- **AI**: PyTorch, Scikit-learn, Jetson/JetPack, LLMs, Unsloth, Isaac-GR00T
- **CAD & Prototyping**: SolidWorks, CATIA V5, Fusion 360, Blender, Autocad, Eagle; 3D printing, soldering, assembly
- **Cloud & Systems**: Docker, Google Cloud; SAP
- **PLC:** SIMATIC S7-1200, TIA-Portal, TwinCAT
- **Web**: Node.js, Vue.js, HTML/CSS; Headless CMS (Directus)

Interests & Social Commitment

- Project management: Development of a bionic hand for robots in collaboration with the University of Rostock.
- Personal project "Exam Alarm Clock": Conception and development of a web app for automated notification of exam results.(pruefung-wecker.web.app)
- Social engagement: Volunteering at a vaccination center in Tunis, Tunisia May 2021
- Powerlifting athlete (state champion in bench press MV) + grappling + swimming
- Interest in politics, history and economics

Detailed proof of professional experience:

A detailed list of projects will be provided upon request.