# Julian Haring

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## Profile

Robotics Engineer focusing on Machine Learning-supported robotic systems with a passion for innovation in collaborative team environments.

## Education

**MSc** **University of Applied Sciences Technikum Wien**, Robotics Engineering — September 2023–September 2026

- **Focus:** Implementation of robotic systems from conceptualization to execution in simulation and reality. Integration of modern techniques such as computer vision, localization algorithms, and Machine Learning.
- **International Experience:** Semester abroad at AGH University of Krakow. Focus on Machine Learning and dynamic vision systems.

**BSc** **University of Applied Sciences Technikum Wien**, Mechatronics/Robotics — September 2020–September 2023

- **Focus:** Fundamentals of mechatronics, automation technology, industrial and mobile robotics (theoretical and practical application in labs and projects).
- **International Experience:** 4-month internship in Kongsberg, Norway.
- Graduated with honors (with good success).

## Experience

**Boehringer Ingelheim**, Automation Engineer — Vienna, December 2023–June 2025 (Fixed-term)

- Implementation of changes to company-proprietary DCS (Distributed Control Systems).
- Independent development of large-scale internal programming tools using VBA.
- Optimization of internal workflows, reducing manual tasks from 30 minutes to 2 minutes of script execution time for thousands of process steps.
- Working with Siemens PLC systems.

**Kongsberg Ferrotech**, Development Engineer (Internship) — Kongsberg, Norway, February 2023–June 2023

- Conceptualization of a 3D sensor concept for subsea robotics applications.
- Integration of the selected sensor into existing systems.
- Evaluation of the system during field deployment.
- Achieved first-ever visualization of the work surface in the micrometer range.

**StepIT Vienna**, Teacher for Computer Science and Programming — Vienna, February 2022–June 2023

- Developing fundamental programming skills and concepts with groups of up to 15 students (aged 10–14).
- Independent creation of teaching concepts and curricula.

## Projects

**Robot Cell** — github.com/Haring-Bot/ROD

- Design and construction of three robotic arms and mechanical components.
- Implementation in ROS to fulfill an industrial use-case.
- Integration of a GUI for control and monitoring.

- Tools used: ROS1, MoveIt, Solidworks, Python.

**Mobile Robot Localization** github.com/Haring-Bot/PROLB

- Implementation and comparison of Kalman, Extended Kalman, and Particle filters for precise localization of a Turtlebot3 in ROS2.
- Performance comparison of the three algorithms and parameter evaluation.
- Tools used: ROS2, C++.

**Enhancing Explainability of Vision Transformers** github.com/Haring-Bot/SPEZ

- Development of a hybrid pipeline (Vision Transformer + SVM) for fish species classification with 97.6% accuracy.
- Implementation of "Relevancy Maps" by combining Attention Maps (DINOv2) and SVM weights to visualize decision-making processes.
- Identification of "Clever Hans" effects and dataset bias through model explainability analysis.
- Tools used: Python, PyTorch.

## Skills

**Languages**

- **German:** Native
- **English:** Professional working proficiency (written and spoken)

**Programming Languages:**

- **Python:** Advanced
- **C++:** Advanced
- **VBA:** Advanced

**Software:**

- **ROS1/2:** Advanced
- **SolidWorks:** CSWA Certified
- **ABB RobotStudio:** Advanced
- **OpenCV:** Advanced
- **PyTorch:** Advanced
- **Siemens TIA Portal:** Basic Knowledge