

# MAGNUS DIERKING

Born in Germany, 21 September 1998

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## WORK EXPERIENCE

08/2025– Present Research Assistant  
 IAS Intelligent Autonomous Systems Group · Technical University of Darmstadt  
 Developing a Python/C++ software stack for FR3 robotic arms, built on ROS2 Jazzy.

10/2024– 05/2025 Research Intern  
 Huawei R&D Huawei Technologies Research & Development UK Limited · London, Shenzhen  
 Extracurricular internship during Master studies. Working on reinforcement learning, imitation learning and supporting middleware for robotics as part of the Embodied AI team.

09/2023– 09/2024 Research Assistant  
 IAS Intelligent Autonomous Systems Group · Technical University of Darmstadt  
 Assisted Ph.D. researchers with experiments, visualization and studies on supporting theory in optimal transport, Bayesian inference and optimization for robot learning.

2018–2021, 2022–2023 Working Student  
 mas Medical Airport Service GmbH · Frankfurt  
 Support personel for the rescue station on the apron of Frankfurt International Airport.

2021–2022 Teaching Assistant  
 TEMF Institute for Accelerator Science and Electromagnetic Fields · Technical University of Darmstadt  
 Developed lesson plans, theoretical / programming tutorials and provided mentorship and feedback for undergraduate students.  
 Courses: Electrodynamics, Numerics for Electromagnetic Field Simulation

## PUBLICATIONS

2025 Ark  
 arXiv Open-source, Python-first robotics framework that provides a Gym-style interface for collecting data, training policies, and switching seamlessly between simulation and real-robot deployment. It includes reusable modules for control, SLAM, motion planning and visualization, and integrates natively with ROS to accelerate end-to-end robotics research.  
 First Author

2025 OpenPyro-A1  
 IEEE RA-L Open-source, low-cost bimanual half-humanoid robot designed for advanced manipulation research. It features a modular, repairable hardware design and supports coordinated two-handed tasks such as folding, cutting, and assembling. The platform enables teleoperation via a Meta Quest 3 and provides interfaces for learning-based controllers to support scalable, real-world robotics experimentation.  
 Co-Author

## EDUCATION

10/2022–  
Present      Computational Engineering

Master of Science

GPA: 1.00 · Technical University of Darmstadt

Thesis: Model Tensor Planning

Ongoing.

Advisor: Prof. Jan PETERS · Supervision: Dr. João CARVALHO, Dr. An Thai LE

Robot Learning · Reinforcement Learning · Deep Generative Models · Intelligent Robotic Manipulation ·

Parallel Programming

Differential & Riemannian Geometry · Numerical Linear Algebra · Geometric Algebra · Information

Theory 1-2 · Convex Optimization · Graph Signal Processing · Control Theory · Optimal Transport

10/2019–  
10/2022      Computational Engineering

Bachelor of Science

GPA: 1.51 · Top 10% · Technical University of Darmstadt

Thesis: Parallel Solution of Linear Systems Arising in Domain Decomposition Methods

C++ implementation of a parallel solver for large-scale surface PDEs within an Isogeometric Analysis (IGA) framework.

Advisor: Prof. Sebastian SCHÖPS · Supervision: MSc. Maximilian NOLTE · Grade: 1.00

Robotics · Software Engineering · Algorithms and Data Structures · Functional & Object-oriented

Programming · Geometric Modelling

Partial Differential Equations · Numerical and Statistical Methods · Mechanics 1-3 · Signals and Systems

· Electrodynamics 1-2 · Maths 1-4

10/2018–  
10/2019      Mechanical Engineering

Completed Coursework · Technical University of Kaiserslautern

Material Science 1-2 · Material Science Lab · Mechanical Design Project · Production Engineering ·

Business Organization

2018      Elisabeth-Langgässer Gymnasium

A-Levels

Math · English · History

## SKILLS

OS      LINUX · Mostly Ubuntu, some Arch

Programming      PYTHON · JAX, PyTorch, CVX, NumPy, SciPy, Pandas  
C++ · Eigen, OpenMP  
Basics · Java, HTML, JavaScript, CSS

Simulation      MUJoCo, PyBULLET

Tools      GIT, ROS2, Docker, L<sup>A</sup>T<sub>E</sub>X

Hardware      Franka Research 3, Trossen Viper  
OptiTrack

## OTHER INFORMATION

Scholarships      2024 · Erasmus Placements Program  
2023 · Deutschlandstipendium

Languages      GERMAN · Mother tongue  
ENGLISH · Fluent  
FRENCH · Basics