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*
Assited 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

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

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, LaTeX

Hardware — Franka Research 3, Trossen Viper
OptiTrack

OTHER INFORMATION

Scholarships
2024 · Erasmus Placements Program
2023 · Deutschlandstipendium

Languages
German · Mothertongue
English · Fluent
French · Basics

November 15, 2025