

MAGNUS DIERKING

Born in Germany, 21 September 1998

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WORK EXPERIENCE

IAS	<i>08/2025– Present</i>	Research Assistant	<i>Intelligent Autonomous Systems Group · Technical University of Darmstadt</i> Developing a Python/C++ software stack for FR3 robotic arms, built on ROS2 Jazzy.
	<i>10/2024– 05/2025</i>	Research Intern	<i>Huawei Technologies Research & Development UK Limited · London, Shenzhen</i> Extracurricular internship during Master studies. Working on reinforcement learning, imitation learning and supporting middleware for robotics as part of the Embodied AI team.
IAS	<i>09/2023– 09/2024</i>	Research Assistant	<i>Intelligent Autonomous Systems Group · Technical University of Darmstadt</i> Assisted Ph.D. researchers with experiments, visualization and studies on supporting theory in optimal transport, Bayesian inference and optimization for robot learning.
	<i>2018–2021, 2022–2023</i>	Working Student	<i>Medical Airport Service GmbH · Frankfurt</i> Support personnel for the rescue station on the apron of Frankfurt International Airport.
TEMF	<i>2021–2022</i>	Teaching Assistant	<i>Institute for Accelerator Science and Electromagnetic Fields · Technical University of Darmstadt</i> Developed lesson plans, theoretical / programming tutorials and provided mentorship and feedback for undergraduate students. Courses: Electrodynamics, Numerics for Electromagnetic Field Simulation
	<i>2025</i>	Ark	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. <i>First Author</i>

PUBLICATIONS

<i>arXiv</i>	<i>2025</i>	Ark	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. <i>First Author</i>
	<i>2025</i>	OpenPyro-A1	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. <i>Co-Author</i>
<i>IEEE RA-L</i>			

EDUCATION

<i>Master of Science</i>	<i>10/2022– Present</i>	Computational Engineering
	<i>GPA: 1.00</i>	<i>Technical University of Darmstadt</i>
	<i>Thesis: Model Tensor Planning</i>	
	<i>Ongoing.</i>	
	Advisor: Prof. Jan PETERS	Supervision: Dr. João CARVALHO, Dr. An Thai LE
	Robot Learning	Reinforcement Learning
	Parallel Programming	Deep Generative Models
	Differential & Riemannian Geometry	Intelligent Robotic Manipulation
	Numerical Linear Algebra	Geometric Algebra
	Information Theory 1-2	Theory
<i>Bachelor of Science</i>	<i>10/2019– 10/2022</i>	Computational Engineering
	<i>GPA: 1.51</i>	<i>Top 10% · Technical University of Darmstadt</i>
	<i>Thesis: Parallel Solution of Linear Systems Arising in Domain Decomposition Methods</i>	
	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
	Mechanics 1-3	Numerical and Statistical Methods
<i>A-Levels</i>	<i>2018</i>	Mechanical Engineering
	<i>10/2019</i>	
	<i>Completed Coursework</i>	<i>Technical University of Kaiserslautern</i>
	Material Science 1-2	Material Science Lab
	Mechanical Design Project	Production Engineering
	Business Organization	
	<i>2018</i>	Elisabeth-Langgässer Gymnasium
	Math	English
	History	

SKILLS

<i>OS</i>	LINUX	· Mostly Ubuntu, some Arch
<i>Programming</i>	PYTHON	· JAX, PyTorch, CVX, NumPy, SciPy, Pandas
	C++	· Eigen, OpenMP
	Basics	· Java, HTML, JavaScript, CSS
<i>Simulation</i>	MuJoCo, PyBULLET	
<i>Tools</i>	GIT, ROS2, Docker, LATEX	
<i>Hardware</i>	Franka Research 3, Trossen Viper	
	OptiTrack	

OTHER INFORMATION

<i>Scholarships</i>	2024	· Erasmus Placements Program
	2023	· Deutschlandstipendium
<i>Languages</i>	GERMAN	· Mothertongue
	ENGLISH	· Fluent
	FRENCH	· Basics