

# Jonas Fischer

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Date of Birth: 18.09.2000



## Profile

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Passionate Informatics student focused on Deep Learning, Computer Vision, and Robotics, with hands-on experience applying Deep Learning in robotics at TUM and developing Machine Learning and GenAI solutions at Siemens Advanta. I aim to build scalable AI systems that transform research into practical innovation.

## Education

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### Technical University of Munich

*Master of Science in Informatics; Current GPA: 1.3*

Munich, Germany

*Oct. 2024 - Present*

- **Specialization:** Deep Learning, Computer Vision, Robotics

### University of Freiburg

*Bachelor of Science in Computer Science; GPA: 1.3*

Freiburg, Germany

*Oct. 2020 - Jun. 2024*

- **Specialization:** Machine Learning and Robotics
- **Bachelor Thesis:** Parameterized and Dynamic Gaussian Mixture Models for Robot Manipulation (Grade 1.0)

## Working Experience

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### BMW

*Working Student – Machine Learning for Mainframe Migration*

Munich, Germany

*Jan. 2026 - present*

### Siemens Advanta

*Working Student – Advanced Analytics and Artificial Intelligence*

Munich, Germany

*Oct. 2024 - Dec. 2025*

- **Machine Learning:** Analyzed 70,000+ projects using OpenAI embeddings, UMAP, and K-means clustering to identify strategic thematic patterns
- **GenAI:** Built and deployed a scalable RAG chatbot leveraging Azure OpenAI, LangChain, and Microsoft Graph API for automated governance and compliance information retrieval
- **Data Engineering:** Built automated SharePoint-to-Azure Search ETL pipelines with SQL monitoring for centralized document access

### Freelancer

*AI Engineer*

Munich, Germany

*Sept. 2025 - Present*

- **GenAI:** Designed and deployed a customized RAG chatbot for *Good Goods Germany GmbH*, integrating LangGraph, ShopifyAPI, and Python for automated product recommendations (<https://www.annimally.de/>)
- **Data Engineering:** Developed automated Shopify data pipelines to detect and synchronize product updates
- **Cloud:** Orchestrated end-to-end deployment of the RAG system on Azure

### University of Freiburg

*Student Assistant – Graph Theory*

Freiburg, Germany

*May 2024 - Sep. 2024*

- **Teaching:** Conducted tutorials and graded assignments and exams

### Fraunhofer Institute for High-Speed Dynamics

*Research Assistant*

Freiburg, Germany

*Jun. 2023 - Feb. 2024*

- **Software Engineering:** Expanded a nanosatellite simulation framework in Python to model orbital mechanics and trajectory tracking
- **Data Analytics:** Conducted analysis with Pandas and NumPy to improve simulation accuracy and performance metrics

- **Teaching:** Conducted tutorials and graded assignments and exams

## Example Academic Projects

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### **Self-Supervised Learning for Tactile Classification** – *PyTorch, Google Cloud, Deep Learning*

- Compared multiple self-supervised learning architectures (JEPA, MAE, AE) for tactile classification.
- Introduced SSL for tactile classification, achieving a 3% improvement in accuracy on CNN baseline.
- Demonstrated the effectiveness of predictive representation learning for tactile perception tasks.
- Code: <https://github.com/JonasEtFi/SSL-for-Tactile-Classification>

### **Reinforcement Learning for Smart Grids** – *PyTorch, OpenAI Gymnasium, Weights & Biases*

- Developed a Multi-Objective Reinforcement Learning framework with Pareto Conditioned Networks.
- Enabled dynamic trade-offs between energy efficiency and safety in smart grid control.
- Code: <https://github.com/JonasEtFi/fork-commonpower-MORL/pull/1>

## Technical Skills

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**ML/AI Frameworks:** PyTorch, Scikit-learn, Huggingface VAE's, Stable Baselines3, XGBoost

**GenAI & LLMs:** LangChain, LangGraph, OpenAI API, RAG systems, Embeddings

**Programming Languages:** Python, SQL, C#

**MLOps & Cloud:** Azure, Google Cloud Engine, Docker, Git, Weights & Biases

**Data Stack:** NumPy, Pandas, Matplotlib, Seaborn, Flask, Microsoft GraphAPI

## General Skills

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**Languages:** German (native), English (fluent, C1)

**Soft Skills:** Team-oriented and self-motivated, with strong problem-solving, communication, and independent working skills

## Other Activities

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**TUMVision:** Member of a student club discussing state-of-the-art Computer Vision papers weekly

**Sports:** Field hockey at HC Wacker Munich, Hyrox

**Hockey Coach:** Player coach of the FT Freiburg men hockey team during the 2023/2024 season

**Barista:** Three years of experience working as a barista

Munich, 5.1.2026