Linhan Li

lilinhanlilinhan@gmail.com| Munich/Shanghai | 2002.08.13 | +49 15124107665

EDUCATION

Technical University of Munich (QS Rankings: 22) 10.2024 – Current

MSc Robotics, Cognition, Intelligence (Teaching Language: English)

- GPA: 1.6 / 1.0 (1.0 highest, 5.0 lowest)
- Courses: Deep Learning, Machine Learning, Natural Language Processing, Robotics, Data Visualization and Analysis

University of Oxford 08.2025

Summer Program Exchange

- Final Grade: A, 1st Class (A highest, F lowest)
- Course: Advanced AI and Machine Learning: Nature Language Processing
- Research Project: WaveNet-Based Asthma and COPD Detection with Multimodal RAG for Evidence-Grounded Clinical Explanation. Advisor: Prof. Dr. Naeemullah Khan, Dr Wael S Albayaydh

Technical University of Munich 10.2021 – 08.2024

BSc Computer Science (Teaching Language: English/German)

- GPA: 1.8 / 1.0
- Courses: Algorithms and Data Structures (1.0), Statistics (1.0), Cloud Software Engineering (1.0), Fundamentals of AI (1.3), Probability Theory (1.3), Advanced Algorithms (1.3), Modelling and Simulation (1.3)

AWARDS

- 2025 Germany Scholarship (~1000 among 50000+ students, 3600€ in total) 10.2024
- 13th of the ICPC Winter Contest 2023 01.2023
- Bronze Medal of the German Collegiate Programming Contest (1st of Technical University of Munich) 06.2022
- 17th of the ICPC Winter Contest 2022 01.2022
- First Prize of the China National Olympiad in Informatics in Provinces 12.2019

RESEARCH EXPERIENCES

Graph RAG -Based Product Information Matching System 10.2025 - 11.2025

Siemens AG

- Leveraged **Graph RAG** and **information retrieval** techniques to address LLMs' deficiencies in structured API knowledge, enabling them to accurately distinguish and identify appropriate API invocation scenarios, resulting in an approximately **20% improvement** in accuracy on API invocation scenario understanding tasks.
- Designed an **LLM prompting** and **data preprocessing** pipeline to construct high-quality corpora, **finetuned** transformer-based embedding and reranking models, deployed the model via **Huggingface** with API integration.
- Evaluated performance using **precision/recall/F1** and conducted **Neo4j**-based knowledge graph visualization and query-driven analysis to support iterative model improvements.

ViT-Based Remote Sensing Image Super-Resolution Reconstruction (1.0/1.0, full grade) 04.2025 - 08.2025

Chair of Data Science in Earth Observation, TUM, Advisor: Prof. Dr. Xiaoxiang Zhu

- Developed a **vision transformer-based** image super resolution model with **dual-polarization** input/output to mitigate the trade-off between temporal and spatial resolution in remote sensing image, achieving multi-dimensional improvements in both visual quality and quantitative metrics (e.g. MSE/PSNR/SSIM).
- Built the model training and inference pipeline with **PyTorch**, including **data augmentation** and **normalization**, **hyperparameters tuning**, evaluation, and qualitative/quantitative result visualization for reproducible experiments.
- Performed temporal and spatial transfer learning with region-specific performance analysis, reporting metric across regions/time splits to quantify generalization on domain shift.

Reinforcement Learning in Shadow Mode for Combustion Engine Control (1.0/1.0, full grade) 04.2024 - 08.2024

Chair of Robotics, Artificial Intelligence and Real-time Systems, TUM, Advisor: Prof. Dr. Matthias Althoff

- Leveraged **deep reinforcement learning** to achieve a balance between engine efficiency and operational safety, **improved engine efficiency by 5%–15%** while **reducing the knocking rate by 80% - 210%** compared with baselines.
- Enhanced the agent training safety while enabling stable policy optimization with **shadow mode**. **Reduced knocking rates by 40%** on average during training, thus reducing potential safety risks and hardware damage.
- Developed a model to simulate engine dynamics, trained reinforcement-learning controllers based on **OpenAI-Gym**.

Cloud Software Engineering Lab (1.0/1.0, full grade) 10.2023 - 02.2024

Chair of Computer Systems, TUM, Advisor: Prof. Dr. Pramod Bhatotia

- Analyzed software performance with **Java profiler**, increased maintainability and algorithms' time complexity by introducing **software patterns** and **caching policies**.
- Introduced **JUnit** and **Mock tests** to ensure the correctness of the code. Utilize **Sanitizer** to ensure code quality.

PUBLICATIONS AND THESIS

Thesis	**Linhan Li**. (2024). **Reinforcement Learning in Shadow Mode for Combustion Engine Control**. Bachelor Thesis, Technical University of Munich, Chair of Robotics, Artificial Intelligence and Real-time Systems.
Manuscripts under review	Aziz Banna, **Linhan Li**, Julian Schmitt, Yahya Hefnawi. **Integrating Microwave Remote Sensing Data for Enhanced Monitoring using Deep Learning**. Technical University of Munich, Chair of Data Science in Earth Observation. Yongjian Tang, **Linhan Li**, Doruk Tuncel, Thomas Runkler. **Agent4re: A Self-refining Multi-agent Framework for End-to-End Requirements Engineering and Benchmarking**. Siemens AG
Manuscripts in preparation	Jonathan T. Müller, **Linhan Li**, Long San Dennis Lai, Emina Sljivic, Yiheng Zhou. **From Report to Patch: A Controlled Study of LLM-Assisted Bug Localization and Repair under Varying Context Access**. Technical University of Munich, Chair of Software Engineering and AI.

WORKING EXPERIENCES

Working Student in CI/CD and Testing 03.2025 - 09.2025

Infineon Technologies AG

- Maintained the **GitLab** repository, participated in software **version migrations** in a **Scrum** team.
- Using **Jenkins** to build an automated deployment pipeline. Implemented **bash and shell scripts** inside the pipeline.
- Conducted **Tessy** and **Ceedling** unit tests and mock tests, improved test coverage.

Teaching Assistant 10.2023 - 09.2024

Courses "Fundamental of Algorithms and Data Structures" and "Fundamental of artificial intelligence", TUM

- Developed weekly tutorial materials and designed **Python** exercises of **Hidden Markov Process** for over 1000 students, including the problem statement, solution, and unit tests. Used **Git** to update and maintain the exercise project.
- Conducted 14-week tutorials for more than 100 students, covering core algorithms including **data structure**, **dynamic programming** and **graph theory**.

SKILLS

- **Programming**: Python (advanced), C++ (advanced), C, Java, R, SQL, HTML
- **Tools:** Git, CI/CD, Docker, TensorBoard, PyTorch, Linux, Jupyter notebook, Latex, Neo4j, LangChain/LangGraph, RAG/GraphRAG, Hugginface
- **Language:** Mandarin (Native), German (DSH-2, Level C1), English (Level C1)