

TAREQ KOMBOZ

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EDUCATION

- 10/2022 - 03/2026 **Master of Science: Computer Science** **University of Stuttgart & University of Adelaide**
 - Final Grade: 1.3 (Scale: 1.0 = Best)
 - Semester Abroad at the University of Adelaide (Baden-Württemberg Scholarship Recipient)
 - Master Thesis "Deep learning for anomaly detection in vehicle control units in trace files" (Supervisor Prof. Dr. Mathias Niepert)
- 10/2018 - 09/2022 **Bachelor of Science: Computer Science** **University of Stuttgart**
 - Final Grade: 1.9 (Scale: 1.0 = Best)
 - Bachelor Thesis "Parameter-Dependent Self-Learning Optimization" (Supervisor Prof. Dr. Dirk Pflüger)

RESEARCH EXPERIENCE

- 04/2026 - 10/2026 **Technical AI Alignment Incubator: Model Poisoning Inoculation** **Safe AI Germany (SAIGE)**
 - Confirmed broad misalignment from narrow poisoning on Qwen3.5-4B using Model Organisms
 - Tested existing defenses (circuit breakers, standard safety fine-tuning) and new data-level antidotes
- 09/2024 - 02/2025 **Master Thesis: Deep learning for anomaly detection in vehicle control units in trace files (NDA)** **University of Stuttgart & Porsche AG**
 - Benchmarked LogLLM vs. LogBERT on proprietary Porsche and open-source data (BGL, ThunderBird)
 - Demonstrated that larger models (8B vs 1B) significantly increase F1-scores (e.g. BGL 0.419 to 0.912)
- 10/2023 - 03/2024 **AI Laboratory Course: Credit Card Fraud Detection** **University of Stuttgart**
 - Compared DL methods vs. traditional Anomaly Detection on tabular data with 550k+ transactions
 - Achieved sota macro-average F1-score of 93% using OC-NN, outperforming kNN baselines (89%)
- 10/2023 - 03/2024 **Study Project: Automated Clustering of Small Molecules** **University of Stuttgart**
 - Improved performance by 15% compared to university's baseline using UMAP and MDAnalysis
- 04/2022 - 09/2022 **Bachelor Thesis: Parameter-Dependent Self-Learning Optimization** **University of Stuttgart**
 - Developed a Learn-to-Optimize framework using RL (REINFORCE, PPO) to solve black-box problems
 - Demonstrated agent generalization to unseen parameter configurations in up to 10 dimensions

WORK EXPERIENCE

- 10/2025 - 03/2026 **R&D Working Student (AI/LLM)** **Porsche AG**
 - Automated test case generation from hardware requirement specifications using LLMs and AWS
- 03/2024 - 08/2024 **Data Science Research Intern** **Porsche AG**
 - Found correlation of customer complaints and ECU faults in vehicles via Association Rule Discovery
- 10/2019 - 09/2020 **Teaching Assistant** **University of Stuttgart**
 - Taught weekly tutorials in "Data Structures and Algorithms" and "Theoretical CS" for 60+ students

EXTRACURRICULAR ACTIVITIES

- 10/2023 - 09/2025 **AI Software Academy: Certificate of Advanced Studies (18 ECTS)** **University of Stuttgart**
 - Completed "Machine Perception and Learning", "Study Project", and "AI Ethics" (Final Grade: 1.0)
- 10/2023 - 03/2024 **Blog Post: Mastering the Game of Go** **University of Stuttgart**
 - Published technical breakdown of AlphaGo/AlphaZero concepts (Deep RL, MCTS, ...) on GitHub Pages
- 04/2023 - 03/2024 **School For Talents** **German Research Foundation**
 - Organized scientific workshops and keynotes about AI for 100+ students (Details)
- 10/2023 - 11/2023 **AI Incubator Batch #3 (Winner)** **Cyber Valley & Carl-Zeiss-Stiftung**
 - Won "Business Model Award" for the AI-Fintech startup prototype "VectisFinance"

RESEARCH INTERESTS & EXPERTISE

- AI Safety:** Model Poisoning, Persona Shift, Jailbreaks, RLHF, PEFT(LoRA), Hallucination, Mechanistic Interpretability
- Reinforcement Learning:** PPO, SAC, DQN, MCTS, DynaQ+, Policy Gradients, Bandits, (PO)MDPs
- Deep Learning Architectures:** Transformers (LLMs), Diffusion Models, GANs, Autoencoders, CNNs, RNNs, GNNs
- Core Stack:** Python, PyTorch, CUDA, JAX, C++, Hugging Face, OpenAI Gym, Scikit-learn, Pandas, NumPy
- Languages:** German (Native), English (C1/Fluent)