Rufat Asadli

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EDUCATION

• **ETH Zurich [5.23/6.00]**   *2023-Present*
MSc in Statistics

• **Charles University [1.00/1.14]**   *2019-2022*
BSc in Economics and Finance
  ◦ Recipient of **Merit Stipend for Outstanding Academic Achievements** for 2 years awarded to **top 10%** students across all departments.

EXPERIENCE

• **NetFabric.ai**   *Mar'25 - Present*
Graduate Student Researcher, Supervised by Prof. Dr. Laurent Vanbever and Dr. Benjamin Bichsel   Zurich, Switzerland
  ◦ Developing through ablation studies a robust fine-tuning benchmark of state-of-the-art LLMs on network configuration data.

• **Rycolab, ETH Zurich**   *Apr'24 - Present*
Graduate Student Researcher, Supervised by Prof. Dr. Ryan Cotterell and Dr. Alex Warstadt   Zurich, Switzerland
  ◦ Developed a **text-only model** to study via grid search sweep how two models' communication is shaped by **speech constraints** and how different bottleneck levels influence language acquisition.
  ◦ Conducted Bayesian hyperparameter sweep for GPT-2 speaker model, identifying optimal PPO-based training configuration to **maximize coherence and grammaticality** of model text summarization.

• **Kapital Bank OJSC**   *Oct'22 - Present*
Leading Data Scientist   Baku, Azerbaijan
  ◦ Developed a **prediction pipeline of daily loan sales** with synthetic feature-engineering using GRU networks and constrained optimization of ensemble learning predictions.
  ◦ Built a **high-frequency prediction model** with CatBoost using advanced feature engineering (cyclical transforms, lags) and optimized predictions via MCMC simulation of error distribution.

PROJECTS

• **Communicative Success as a Learning Signal for Interactive Language Models [Code ○]**   *Apr'24-Feb'25*
Under review
  ◦ Developed an **interactive language model training** method inspired by child acquisition, showing communication-based rewards signal grammaticality and constraints shape speaker behavior.

• **Does Catastrophic Forgetting Happen in Tiny Subspaces? [Code ○] [Report 📄]**   *Fall'24*
For Deep Learning, ETH Zürich
  ◦ Explored **neural network subspace structure in continual learning** through ablation studies that task-specific learning/forgetting primarily occurs in subspaces with small eigenvalues.

• **TARMAC: Conversational AI Dispatcher**   *Jul'24 - Dec'24*
Startup Project
  ◦ Contributed to a **logistics dispatch system** using named-entity recognition and SQLChain on top of fine-tuned Llama 3 model to convert user prompts into SQL queries for truck data retrieval.

SKILLS

• **Programming Languages:** Python, HTML, CSS

• **Packages and Softwares:** PyTorch, TensorFlow, Keras, Transformers, NLTK, LangChain, TRL, NumPy, Selenium, Git, Bash, SQL, Docker, LaTeX

AWARDS AND ACHIEVEMENTS

• Recipient of State Program scholarship to study Master's degree abroad (Azerbaijan)   2023
• TensorFlow Developer Certificate   2022