

Rufat Asadli

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EDUCATION

- **ETH Zürich [5.20/6.00]** 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 institutes.

EXPERIENCE

- **Rycolab, ETH Zürich** Apr'24 - Present
Student Researcher, Supervised by Prof. Dr. Ryan Cotterell and Dr. Alex Warstadt Zurich, Switzerland
 - Building a **text-only model** to simulate communicative feedback by having a speaker to summarize privileged information for a listener, optimizing the listener's **question-answering performance** via PPO.
 - Adapting the original pipeline from T5 to GPT-2 as speaker model and using T5 as listener model, to test for enhanced **summary coherence and grammaticality** for increased listener comprehension.
- **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.
 - Simulated sales potentials for 56 branches using Gaussian Processes and Bayesian Optimization in order to **identify over-/underperforming branches** for targeted insights.
- **PASHA Insurance OJSC** Apr'21 - Aug'21
Data Science Intern Baku, Azerbaijan
 - Developed a simulation of **optimal full-time equivalent (FTE)** allocation using tree-based methods.
 - Prepared a draft of **contingency plan for high-risk stress cases** via scenario-based simulations.

PROJECTS

- **Does Catastrophic Forgetting Happen in Tiny Subspaces?** [[Code](#)] [[Report](#)] Fall'24
For Deep Learning, ETH Zürich
 - Investigated how the **loss Hessian subspace structure impacts catastrophic forgetting in continual learning**, demonstrating through experiments and ablation studies on benchmark datasets that task-specific learning and forgetting occur primarily in subspaces associated with small eigenvalues.
- **TARMAC: Conversational AI Dispatcher** [[Website](#)] Jul'24 - Dec'24
Startup Project
 - Contributed to the development of a **logistics planning application** for truck load dispatch by building named-entity recognition based SQLChain pipeline on top of Llama 3 models to generate conditional SQL queries from user prompts and present truck data on the chat interface.
- **Project Caliber** [[Code](#)] 2022
AI and Data Science Center of Excellence (CoE), Kapital Bank OJSC
 - Developed a **high-frequency probabilistic prediction model** using a CatBoost regressor with a rigorous feature-engineering pipeline (e.g., cyclical transforms and lags), and optimized initial batch predictions through MCMC simulation of the training error distribution.

SKILLS

- **Programming Languages:** Python, R
- **Packages and Softwares:** PyTorch, TensorFlow, Keras, Transformers, NLTK, LangChain, NumPy, Git, SQL, Docker, L^AT_EX

AWARDS AND ACHIEVEMENTS

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