Pouya Ghahramanian

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Education

Ph.D. in Computer Engineering | *Bilkent University, Ankara, Turkey*   2022 - Present
- Member of Bilkent Information Retrieval Group (BilIR)

M.Sc. in Computer Engineering | *Bilkent University, Ankara, Turkey*   2019 - 2022

B.Sc. in Computer Engineering | *Iran University of Science and Technology (Elm-O-Sanat), Tehran, Iran*   2013 - 2018

Technical Skills

Languages Python, Java, C#, C++, Visual Basic, SQL, HTML/CSS, JavaScript

Technologies/Frameworks PyTorch, TensorFlow, HuggingFace, AWS (EC2, S3, ECR, Bedrock, Fargate), Boto3, Docker, FastAPI, Pydantic, Streamlit, NGINX, Scikit-learn, Linux, Git, CI/CD pipelines

Experience

AI Researcher – LLMs & Online Learning | *TÜBİTAK (grant no. 117E870, 120E103, 125E060), Ankara, Turkey*   April 2019 – Present
- Developed machine learning models for data stream mining and introduced the AdaNEN neural model, achieving up to an 8.8% accuracy improvement on 13 data streams. Published in top-tier journals including ACM TKDD and IEEE Access.
- Proposed a novel optimizer ("Adaptimizer") and conducted large-scale LLM fine-tuning experiments under temporal drift using HuggingFace and PyTorch.
- Led the design of an online adaptation framework for streaming LLM fine-tuning, benchmarked on a 1M-document dataset.

Teaching Assistant | *Bilkent University, Ankara, Turkey*   February 2019 – Present
- Teaching Assistant for "Information Retrieval" (2020–2025), "Computer Organization" (2020–2025), "Algorithms and Programming II" (2019).
- Worked closely with BilIR and supervised projects on semantic retrieval and neural ranking models.

Android Developer Intern | *Petanux GmbH, Bonn, Germany*   June 2018 – Sep. 2018
- Developed an Android application for an online store, enabling price comparison across multiple vendors.

C#.NET Developer | *Azar-Tarh, Tehran, Iran*   June 2017 – Oct. 2017
- Developed a car diagnostics Windows app used by 3,000+ automotive technicians, improving efficiency by 20%.

Research Highlights

LLM Fine-tuning with Online Feedback, Designed an On-the-Fly Adaptation (OFA) framework for adapting LLMs under temporal drift using streaming data. Developed a custom optimizer ("Adaptimizer") and demonstrated improvements of up to +22.80% in macro-F1 over standard fine-tuning on a 1M-sample news dataset. Paper under double-blind review at ACM CIKM 2025.

Continual Learning for NLP, Explored continual pretraining and evaluation of transformer models (BERT, RoBERTa, DeBERTa) on evolving news corpora using HuggingFace and PyTorch. Built reproducible evaluation pipelines and metrics logging for long-term adaptation tracking.

Publications

- **Ghahramanian, P.**, Bakhshi, S., Bonab, H., & Can, F. (2024). A Novel Neural Ensemble Architecture for On-The-Fly Classification of Evolving Text Streams. **ACM TKDD**
- Bakhshi, S., **Ghahramanian, P.**, Bonab, H., & Can, F. (2023). A Broad Ensemble Learning System for Drifting Stream Classification. **IEEE Access**
- **Ghahramanian, P.**, (2023). Evolving Text Stream Classification with a Novel Neural Ensemble Architecture, Master's Thesis

Academic Service

Conference Reviewer ACM SIGIR (2023–2025), CIKM (2023–2024)

Relevant Courses and Projects

Search Engines, Covered lexical search, neural re-ranking, and semantic retrieval. Implemented Transformer-based models for ranking.

Deep Generative Networks, Developed DCGANs and CycleGANs for image synthesis and style transfer tasks.

Statistical Foundations of NLP, Built Transformer and LSTM models for sentiment analysis and classification.

Deep Learning, Trained ResNets and BERT for vision and language tasks.

Language Proficiency

English (Advanced, TOEFL ibt: 104), **Turkish** (Advanced), **Azerbaijani** (Native), **Persian** (Native)