Berkay Guler

Irvine, California
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github.com/BerkIGuler

Education

University of California, Irvine Sept. 2023 – Present
Ph.D. Student in Networked Systems Program, Computer Science Department *Irvine, California*

- Henry Samueli Endowed Fellow, research on Machine Learning for Wireless Communication Networks
- Advised by Prof. Hamid Jafarkhani

École Polytechnique Fédérale de Lausanne (EPFL) Feb. – Aug. 2022
Exchange Student in School of Computer and Communication Sciences *Lausanne, Switzerland*

Bilkent University Sept. 2018 – June 2023
B.S. in Electrical Engineering, Summa Cum Laude (GPA: 3.82/4.0) *Ankara, Turkey*

- Full tuition waiver and stipend during the program

Publications

B. Guler, B. Aygun, A. Gerek and A. S. Gurel, "Deep Active Learning for Address Parsing Tasks with BERT," *2023 31st Signal Processing and Communications Applications Conference (SIU)*, Istanbul, Turkey

B. Guler, H. Jafarkhani, "AdaFortiTran: An Adaptive Transformer Model for Robust OFDM Channel Estimation," *submitted to* 2025 International Conference on Communications (ICC), Montreal, Canada

Experience

Machine Learning Engineer Feb. – Aug. 2023
DataBoss Security & Analytics *Ankara, Turkey*

- Conducted research on **text summarization** and **text normalization** with **Transformers**
- Developed **APIs** to host inference endpoints of text normalization and text summarization models
- Developed and deployed an image processing pipeline for automatic information extraction from documents

Senior Year Project Engineer Sept. 2022 – May 2023
TUBITAK (Scientific and Technological Research Council of Turkey) *Ankara, Turkey*

- Worked on **catastrophic forgetting prevention strategies** for **continual learning** from live video streams
- Implemented **object tracking** and **object detection** algorithms on NVIDIA **edge AI** devices

Undergraduate Student Researcher Mar. 2022 – June 2023
ICON Lab, Bilkent University *Ankara, Turkey*

- Researched improving image classifier robustness with synthetic data from **denoising diffusion probabilistic models**
- Worked on mitigating site class imbalance issues in MRI synthesis with **federated learning**

Machine Learning Research Intern Aug. 2022 – Feb. 2023
Huawei *Istanbul, Turkey*

- Decreased labeling costs of Address Parsing Module in Huawei Petal Maps by improving sample complexity with **active learning** on **Transformers**
- Developed a **Python** framework to mine brand names from the web for use in Huawei Petal Maps

Undergraduate Student Researcher Feb. – Aug. 2022
MMSPG, EPFL *Lausanne, Switzerland*

- Designed a realistic assessment framework to evaluate the robustness of **deepfake detectors**
- Implemented state-of-the-art deepfake detectors in **PyTorch** for framework testing

AI and Embedded Software Intern June – Aug. 2021
Baykar Defence *Istanbul, Turkey*

- Developed **embedded AI C/C++** software for UAV Gimbal payload, focusing on improving CAN communication latency

Technical Skills

Programming Languages: Python, MATLAB, C/C++, Java
Tools & Frameworks: PyTorch, Scikit-learn, Git, GitLab, Jira, Docker, Linux, Bash, SQL, Spark, Pandas, NumPy, LaTeX, OpenCV, Scikit-image, Flask

Relevant Coursework

Deep Generative Models, Optimization, Machine Learning, Design and Analysis of Algorithms, Data Structures, Image Analysis and Pattern Recognition, Statistics, Internet Analytics, Computer and Communication Networks, Computers and Data Organization, Microprocessors, Digital Design, Feedback Control Systems, Signal Processing for Communications, Random Processes, Digital Signal Processing, Digital Communications

Leadership & Activities

POWER (Peers Offering Wellness Education Resources) Ambassador, UC Irvine | 2024 – Present
Mentor, Graduate International Connection, UC Irvine | 2024 – Present
Student Guide, Bilkent University Information Office | 2021 – 2023
Head of Sponsorship, Bilkent MUN Club | 2021 – 2022
Team Member, Skyworks UAV Robotics | 2020 – 2021
Interests: Judo, Soccer, Cycling, Running, Guitar