ALPEREN GORMEZ

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EDUCATION

University of Illinois Chicago — **Chicago, IL**
Ph.D. Electrical and Computer Engineering — *Aug 2019 – Present (2024)*
• **Cumulative GPA: 4.0 / 4.0**
• Relevant Coursework: Machine Learning Systems Design (Stanford), Full Stack Deep Learning (UC Berkeley), Advanced Deep Learning & Reinforcement Learning (DeepMind), Neural Networks, Machine Learning, Parallel Processing (C, C++), Algorithms, Convex Optimization, Image Analysis & Computer Vision, Pattern Recognition, Digital Signal Processing, Digital Speech Processing

Bilkent University — **Ankara, TURKEY**
B.S. Electrical and Electronics Engineering — *Aug 2015 – June 2019*
• Relevant Coursework: Statistical Learning and Data Analytics, Neural Networks, Artificial Intelligence, Digital Signal Processing, Fundamental Structures of Computer Science, Probability and Statistics, Linear Algebra & Differential Equations

RESEARCH EXPERIENCE

University of Illinois Chicago — **Chicago, IL**
Research Assistant — *Aug 2019 – Present*
• Working on early exit neural networks, adaptive inference, and model compression with Prof. Erdem Koyuncu to decrease the computational cost of deep learning systems while preserving the performance
• Investigating the combined effects of early exiting, pruning and sparsity for the semantic segmentation task using PyTorch
• Experimenting on efficient distributed neural network training
• Managing an undergraduate intern on knowledge distillation and conditional computation research
• Participating in the following communities: EEML, tinyML, SNN

Nagoya University — **Aichi, JAPAN**
Research Student — *May – July 2018*
• Conducted research on pattern recognition and anomaly detection under the supervision of Prof. Kenji Mase

PUBLICATIONS

1. **A. Gormez**, V. Dasari, E. Koyuncu. "E^{2}CM: Early Exit via Class Means for Efficient Supervised and Unsupervised Learning," IEEE World Congress on Computational Intelligence (WCCI): International Joint Conference on Neural Networks (IJCNN), July 2022.
2. **A. Gormez**, E. Koyuncu. "Pruning Early Exit Networks", Sparsity in Neural Networks 2022, July 2022.

WORK EXPERIENCE

Roku — **San Jose, CA**
Machine Learning Intern — *May 2021 – Aug 2021*
• Worked on reducing the inference time of a CTR prediction model in the Advertising Engineering team
• Used mlpy for cross feature generation and feature transformation, Apache Spark for big data processing and TFX for pipelining
• Increased AUC by 0.03
• Experimented with early exit networks and knowledge distillation using TensorFlow

Deep Learning Indaba — **Chicago, IL**
Mentor — *Jan 2021 – Present*
• Voluntarily mentoring a student to support machine learning and artificial intelligence in Africa

University of Illinois Chicago — **Chicago, IL**
Teaching Assistant — *Aug 2019 – Present*
• Taught digital signal processing and communications in MATLAB, helped students in the Neural Networks course

ASELSAN — **Ankara, TURKEY**
Candidate Engineer — *Feb – May 2019*
• Built neural networks in TensorFlow and classified the sounds received by a passive sonar
• Worked on the visualization of the data collected by ultrasonic sensors using Python and Julia. Found a faulty sensor using the data
• Implemented sonar signal processing algorithms in a Linux system for the acoustics signal processing department

HONORS & AWARDS

• **Eastern European Machine Learning Summer School 2022** – Selected to attend. Top-voted poster award for E^{2}CM *2022*
• **Bilkent University Honor Student** – High academic standing *2015-2019*
• **Bilkent University Comprehensive Scholarship** – Full tuition waiver and stipend during the B.S. program *2015-2019*
• **LYS Degree** – Ranked 341st in Turkey's National University Entrance Exam among over 2 million students *2015*