NEGIN RAOOF

github.com/neginraoof neginraoof.com neginmr@utexas.edu

EDUCATION

University of Texas at Austin — Aug 2022 - Present
PhD in Electrical and Computer Engineering

University of Texas at Austin — Aug 2013 - Dec 2016
BSc in Electrical and Computer Engineering, Honors, GPA 3.83/4.00
Interdisciplinary Certificate in Digital Arts and Media
Member of Eta Kappa Nu

PUBLICATIONS & PROJECTS

Multitasking Models are Robust to Structural Failure:
A Neural Model for Bilingual Cognitive Reserve — [NeurIPS 2022]
Giannis Daras*, Negin Raoof*, Zoi Gkalitsiou, Alexandros G. Dimakis,

Processing trillions of events per day with Apache Kafka on Azure — October 2018
Microsoft
https://azure.microsoft.com/en-us/blog/processing-trillions-of-events-per-day-with-apache-kafka-on-azure/

- Led a series of experiments focusing on categorizing and optimizing system's latency, throughput, and reliability.
- Identifying and analyzing key software and hardware configurations that impact Kafka servers' and producers' performance, used in production based on customer requirements.

Predicting and understanding road danger levels in the developing world: Classifying road and traffic videos from Nairobi, Kenya — May 2020
Stanford Center for Professional Development
http://cs230.stanford.edu/projects_winter_2020/reports/32640758.pdf

- Developed an object detection and tracking system trained on videos of several road segments from Nairobi to predict road danger level (classes).

Sound Shield, An Intelligent Noise-Masking System — August 2015 – May 2016
Dr. Brian Evans, Dr. Gregory Allen, and Dr. Bruce Pennycook - UT Austin
https://www.youtube.com/watch?v=Lkl4F5QG1MU

- Won the 2nd Place Award at ECE Honors and entrepreneurship Senior Design Contfest.
- Designed and implemented a dynamic noise-masking solution for open environments (Python, C).
- Built a web application for real-time system control, manipulation, and analysis (JavaScript).

PROFESSIONAL EXPERIENCE

Microsoft — Redmond, WA
Software Engineer II — June 2017 – October 2021

- Actively contributed to the PyTorch JustInTime compiler, and to design and implementation of the TorchScript IR to ONNX IR converter (Python, C++).
- Collaborated in ONNX IR design and worked on the ONNX Runtime engine for deep learning model training and inference at scale, targeting run-time optimization of models at scale (e.g. Transformer-based models)

Software Engineer

- Collaborated on development of Siphon, a near real-time distributed data streaming system on Azure based on Apache Kafka. Led a project on performance optimization of managed Kafka servers, focusing on system throughput, latency, and reliability.

Intel — Chandler, AZ
Perceptual Computing Software Engineering Intern — May 2016– August 2016

- Worked on CPU kernel implementation optimization of convolutional models for object detection (based on the Caffe framework), Advanced Driver Assist team.

HONORS & AWARDS

- Recipient, Cockrell School of Engineering Graduate Fellowship, University of Texas at Austin
- Recipient, McPeake-Shuler Endowed Presidential Scholarship, University of Texas at Austin
- 2nd Place Award, UT ECE Senior Design Competition, University of Texas at Austin
- College Scholar Honor, Cockrell School of Engineering, University of Texas at Austin

RELEVANT COURSEWORK

Graduate-level	Probability and Stochastic Processes, Convex Optimization, Deep Learning, Deep Learning for Big Visual Data, Analytical Methods in Eng.
Undergraduate-level	Data Mining, Data Science Lab, Real-time DSP Lab, Digital Signal Processing, Digital Image and Video Processing, Algorithms, Probability and Random Processes, Automatic Control, Software Design and Implementation I II,Digital Imaging and Visualization

TECHNICAL SKILLS

- Python, C++, Java, C#, Kubernetes, and Apache Kafka
- PyTorch/TorchScript TensorFlow, ONNX frameworks