NEGIN RAOOF

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EDUCATION

University of Washington *Sept 2021 - Aug 2022*
MSc in Electrical and Computer Engineering

University of Texas at Austin *Aug 2013 - Dec 2016*
BSc in Electrical and Computer Engineering, Honors, GPA 3.77/4.00
Interdisciplinary Certificate in Digital Arts and Media
Member of Eta Kappa Nu

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 study on performance bench-marking and optimization of managed Kafka servers, focusing on system throughput, latency, and reliability.
- Developed a front-end proxy application for managing and balancing producer requests (Java, Kubernetes).

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.

RESEARCH EXPERIENCES & PROJECTS

Analyzing robustness in multilingual models *August 2021 - Present*
Dimakis Lab - UT Austin

- Theoretical characterization of multi-task model parameters, and studying the impact of multi-task training on robustness to parameter pruning.
- Conducting comparative experiments on robustness patterns in multilingual and monolingual generative models (GPT-2).

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 Contest.
- 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).

Controlling Tinnitus: Comparing the impact of masking vs. notching the Tinnitus frequency on lowering Tinnitus intensity Tinnitus intensity
Dr. Brian Evans, Dr. Bruce Pennycook - UT Austin *August 2016 – December 2016*

- Led a series of experiments focusing on categorizing and optimizing for various system requirements for different customers.
- Identifying and analyzing key software and hardware configurations that impact Kafka servers' and producers' performance in terms of latency, throughput, and reliability.

RELEVANT COURSEWORK

Graduate-level:	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, TensorFlow, and ONNX frameworks

AWARDS

- 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