KOSSAR POURAHMADI-MEIBODI

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EDUCATION

Ph.D., Computer Science, University of California, Davis *Sep. 2022 - Present*
Advisor: Dr. Hamed Pirsiavash

Ph.D., Computer Science, University of Maryland, Baltimore County *Aug. 2021 - May 2022*
Transferred to the University of California, Davis
Advisor: Dr. Hamed Pirsiavash

Bachelor of Science, Computer Engineering, University of Tehran *Sep. 2015 - Feb. 2020*
Thesis: Energy consumption analysis of android applications by generating automatic test cases.
Advisor: Dr. Fathiyeh Faghih

RESEARCH EXPERIENCE

Research Assistant, University of California, Davis *Sep. 2022 - Present*
PI: Dr. Hamed Pirsiavash, University of California, Davis

ML Research Intern, Apple Inc. *May 2022 - Aug. 2022*
As an intern in Machine Intelligence and Neural Design (MIND) team, I worked on a non-heuristic sample-efficient training method that selects the most meaningful subset of training data at each epoch for the model to learn. My responsibilities included implementing a generic method that does not depend on the choice of the network architectures and is able to maintain accuracy while reducing the number of optimization updates. Our method was able to consistently outperform the recent sampling baseline under the same selection setting.

Research Assistant, University of Maryland, Baltimore County *Aug. 2021 - May 2022*
Collaborated in implementing a non-contrastive self-supervised representation learning approach, called CMSF, that generalizes the idea of the paper "Bootstrap your own latent: A new approach to self-supervised Learning", *NeurIPS* 2020, by pulling one view of the query image to not only its other view but also to its far neighbors that are still semantically related. In addition to being compute-efficient, CMSF is trained with an order of magnitude lower resources compared to other baselines. This paper got accepted at ECCV 2022.
PI: Dr. Hamed Pirsiavash, University of Maryland, Baltimore County

Research Assistant, Remote *Aug. 2020 - Jul. 2021*
Proposed a simple baseline for low-budget active learning on image classification that does not require 1) the human-in-the-loop process of unlabeled data annotation and 2) a large initial labeled pool. The paper is under review.
PI: Dr. Hamed Pirsiavash, University of Maryland, Baltimore County

Research Assistant, University of Tehran *Sep. 2019 - Mar. 2020*
Analyzed the effects of bounding box size, aspect ratio, and center on bounding box regression performance of object detection models, and proposed a novel bounding box representation method using the polar coordinate system to improve the small object detection accuracy.
PI: Dr. Mohammad Rastegari, Department of Computer Science, University of Washington
and Dr. Mohammad Amin Sadeghi, Department of Computer Engineering, University of Tehran

Bachelor's Research, University of Tehran *Aug. 2019 - Feb. 2020*
Generated test cases for android applications based on the control-flow graph of the source code in order to detect the missing deactivation of energy-related resources by static and dynamic analyses. This project received the **Best Undergraduate Project Award**.
PI: Dr. Fathiyeh Faghih, Department of Computer Engineering

Research Intern, Institute for Research in Fundamental Sciences, Iran *May 2018 - Nov. 2019*
Implemented a hardware accelerator in HDL to speed up neural network training by sharing resources in a pipelined manner. The paper is accepted at **ISCAS 2020**.
PI: Dr. Ahmad Khonsari, Department of High Performance Computing

Research Intern, University of Tehran *May 2017 - Aug. 2017*
Collected and evaluated data from a multi-armed bandit problem for human characteristics studies.
PI: Dr. Babak Nadjar Araabi, Pattern Recognition Laboratory

PUBLICATIONS

Ajinkya Tejankar*, Soroush Abbasi Koohpayegani*, KL Navaneet*, **Kossar Pourahmadi**, Akshayvarun Subramanya, Hamed Pirsiavash. "Constrained Mean Shift Using Distant Yet Related Neighbors for Representation Learning." *ECCV*, 2022 (* equal contribution)

Kossar Pourahmadi, Parsa Nooralinejad, Hamed Pirsiavash. "A Simple Baseline for Low-Budget Active Learning." *arXiv preprint arXiv:2110.12033*, 2021

Reza Hojabr, **Kossar Pourahmadi***, Parsa Nooralinejad*, Kamyar Givaki*, Ahmad Khonsari, Dara Rahmati, and M. Hassan Najafi. "TaxoNN: A Light-Weight Accelerator for Deep Neural Network Training." *IEEE International Symposium on Circuits and Systems*, 2020 (* equal contribution)

TEACHING EXPERIENCE

Teaching Assistant, CMSC 341 - Data Structures, University of Maryland, Baltimore County
Aug. 2021 - May 2022
Providing support sessions for course projects.
Dr. Mohammad Khashayar Donyaee, Department of Computer Science

Teaching Assistant, Data Structures and Algorithms, University of Tehran
Aug. 2019 - Jan 2020
Provided support sessions for course projects and homeworks, evaluated laboratory write-ups, and graded exams.
Dr. Hesham faili and Dr. Fathiyeh Faghih, Department of Computer Engineering

HONORS

Recipient, Graduate Student Association (GSA) Professional Development Grant *May 2022*
University of Maryland, Baltimore County

Recipient, CVPR 2022 Travel Grant *Apr. 2022*

Recipient, Best Undergraduate Project Award, University of Tehran *Feb. 2020*

Recipient, Master's Fellowship Award, University of Tehran *Mar. 2019*
Exempted from the master's comprehensive entrance exam of the University of Tehran as an exceptionally talented student.