Kossar Pourahmadi Meibodi

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Summary

I am a PhD student at the University of Maryland, Baltimore County. My research interest lies at the intersection of computer vision and machine learning.

Education

2021 **PhD in Computer Science** , *University of Maryland, Baltimore County*, United States.

2015–2020 **B.Sc in Computer Engineering** , *University of Tehran*, Department of Electrical and Computer Engineering, Iran.

- Best undergraduate thesis award

Professional Experience

2018 - 2020 **Institute for Research in Fundamental Sciences (IPM) - Iran**.
Internship

- Implemented a low-power hardware accelerator for both inference and training processes using **Verilog**. The work is accepted at **ISCAS 2020**.

2019 **Department of Electrical and Computer Engineering, University of Tehran - Iran**.
Teaching Assistant

- Delivered problem-solving sessions for **"Data Structures and Algorithms"** course.

2017 - 2018 **Machine Learning Laboratory of the University of Tehran - Iran**.
Internship

- Exploited humans' characteristics from their collected choices in a multi-armed bandit problem using deep learning.

Publication

ISCAS 2020 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 (ISCAS), 2020

Honors and Awards

2020 Received **Best Undergraduate Thesis Award** from the University of Tehran.

2020 Received the University of Tehran **M.Sc. Fellowship Award** as an exceptional talented student.

Notable Projects

2018 **Dynamic Neural Network from Scratch, [Repo]**, *Artificial Intelligence*.
Object-oriented implementation of a dynamic neural network with pure python. You can use different activation functions, regularizers, and gradient descents. The network will be trained on the noMNIST dataset.

2018 **Q-Maze**, *Artificial Intelligence*.
Solving any size of mazes with Q-learning algorithm. Different reward functions were defined and all of them solved the given maze in minimum time and maximum accuracy.

2018 **Course Scheduling with Genetic algorithm**, *Artificial Intelligence*.
The list of class sections of all courses are given and a schedule generated with the most student satisfaction using genetic algorithm.

2017 **Obstacle avoidance robot**, *Robotics*.
Using AVR Microcontrollers and Ultrasonic sensors, we designed a vehicle (mount the robot chip on a RC car) that would stop in case of approaching an obstacle. The AI was programmed in C and embedded in ATMega32 chip. When the vehicle approaches to an obstacle, the AI unit triggers the brakes and when an object move toward the vehicle and doesn't stop, the AI unit triggers the engine to move in opposite direction.

2019 **Detection of Energy-Inefficiency Patterns in Android Applications**, *Bachelor's Thesis*.
Since android applications are continuously becoming increasingly complex, energy-related defects are of significant importance to developers and app users. In this thesis, I generated effective test cases 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 thesis got the **best undergraduate thesis award** from the University of Tehran.

Skills

Machine Learning	Python, Tensorflow, PyTorch, Numpy, Pandas, scikit-learn, OpenCV
Programming Languages	C, C++, Java, Scheme, R, Prolog, Javascript, Node.js, PHP, MATLAB, Verilog, Alloy, SPIN, NuSMV
Softwares	Visual Studio, Git, CodeVision, Android Studio, Intellij IDEA, PyCharm, WebStorm
Simulators	Modelsim, Quartus, PSPICE, ISE, Proteus
Databases	SQLite, MySQL, SQL Server
Scientific Skills	Algorithm design and implementation, Object Oriented design, Designing Rich Internet Applications, Designing hardware systems with HDL, Designing embedded systems using Microcontrollers and FPGAs (Arduino , AVR , etc.)
Other Programming Skills	ReactJs, Django, jQuery, OpenSSL, UML Design, Tex