

Mohammad Arman Soleimani

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EDUCATION

Sharif University of Technology

Bachelor of Science in Computer Engineering

Tehran, Iran

Expected February 2024

- GPA: 19.17 (20-point scale)
- Undergraduate thesis topic: Processing in memory for DRAM

RESEARCH EXPERIENCE

Research Assistant

Institute for Research in Fundamental Sciences (IPM) and Sharif University of Technology

September 2021 – Present

Tehran, Iran

- Explored processing-in-memory techniques for DRAM and SRAM
- Analyzed novel methods for in-memory bit-wise operations and hyper-dimensional computing
- Co-authored three papers published in **DAC**, **ISLPED**, and **NocArc**, and two manuscripts in preparation

Research Assistant

Sharif University of Technology

July 2023 – September 2023

Tehran, Iran

- Implemented real-time scheduling algorithms using Reinforcement Learning (RL)
- Simulated various algorithms and experimented with different setups
- Contributed to two manuscripts in preparation

Research Intern

EPFL

July 2022 – September 2022

Lausanne, Switzerland

- Accepted at the Summer@EPFL research internship program
- Studied the state-of-the-art in ASIC and FPGA routing using Reinforcement Learning (RL)
- Investigated different implementations and presented results

PUBLICATIONS

- Rohbani, Nezam, **Mohammad Arman Soleimani**, and Hamid Sarbazi-Azad. "CoolDRAM: An Energy-Efficient and Robust DRAM". In 2023 IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED), 2023. (Received **Best Paper** in Track 1)
- Safari, Maede, Nezam Rohbani, **Mohammad Arman Soleimani**, and Hamid Sarbazi-Azad. "OCRA: An Oblivious Congested Region Avoiding Routing Algorithm for 3D NoCs." In Proceedings of the 16th International Workshop on Network on Chip Architectures, 2023.
- Rohbani, Nezam, **Mohammad Arman Soleimani**, and Hamid Sarbazi-Azad. "PIPF-DRAM: processing in precharge-free DRAM". In Proceedings of the 59th ACM/IEEE Design Automation Conference, 2022.

ADDITIONAL EXPERIENCE

Undergraduate Teaching Assistant

Sharif University of Technology

September 2020 – Present

Tehran, Iran

- Assisted with assignments in Operating Systems, Linear Algebra, Computer Architecture, Logic Design, Digital System Design, Computer Structure, and Fundamentals of Programming
- Developed course projects for Embedded Systems and Operating Systems

Intern

Zista Gene Afarin

October 2023 – Present

Tehran, Iran

- Studying CNNs and transformers and their applications in genomics

Mentor, IoT workshop

MadeInLobby Event, Sharif University of Technology

July 2021 – September 2021

Tehran, Iran

- Tutored students on Arduino programming and basic electronics
- Guided participants on their projects

SELECTED PROJECTS

Clock with Games <i>Arduino, Edge Impulse</i>	February 2023
<ul style="list-style-type: none">• Created a tabletop clock with multiple features such as games• Enabled spoken keyword detection using Edge Impulse	
Bustan Classification <i>Scikit-Learn, Machine Learning</i>	July 2022
<ul style="list-style-type: none">• Collaborated in a team to classify Farsi poem couplets• Inspected different algorithms and results	
Multicore Image Manipulation <i>CUDA, AVX2</i>	July 2022
<ul style="list-style-type: none">• Implemented algorithms such as Sobel edge detection and green-screen background changing• Utilized CUDA and AVX2 instructions	
Matrix Block-Multiplier <i>Verilog, Xilinx ISE, Spartan6</i>	July 2021
<ul style="list-style-type: none">• Designed, simulated and synthesized a block-multiplier for arbitrary-sized matrices• Simulated the design using ModelSim and synthesized on an FPGA	
Pipelined MIPS Processor <i>Quartus, MIPS32</i>	July 2021
<ul style="list-style-type: none">• Implemented a MIPS32-like processor using Quartus schematic design• Verified the design by writing instructions inside the memory	

RELEVANT COURSEWORK

Introduction to Embedded Machine Learning <i>Edge Impulse, offered through Coursera</i>	Non-credit
System-On-Chip Design (Graduate) <i>Sharif University of Technology</i>	20.0/20.0
Artificial Intelligence <i>Sharif University of Technology</i>	20.0/20.0
Computer Architecture <i>Sharif University of Technology</i>	20.0/20.0
Digital System Design <i>Sharif University of Technology</i>	19.8/20.0
Embedded Systems <i>Sharif University of Technology</i>	19.5/20.0
VLSI Laboratory <i>Sharif University of Technology</i>	19.5/20.0

ACHIEVEMENTS

- Best Paper in Track 1 (Technology, Circuits and Architectures) at ISLPED 2023 for our paper “CoolDRAM: An Energy-Efficient and Robust DRAM”
- Ranked 12th out of over 150,000 participants in the national university entrance exams (Concours), Mathematics and technology track, 2019
- Ranked 6th out of over 130,000 participants in the national university entrance exams (Concours), English language track, 2019

SKILLS

Languages:

Farsi: Native

English: C2, IELTS Academic band 8.5 (S:9, L:9, R:9, W:7.5)

Programming: C/C++, Python, Java, Arduino

Hardware Description: Verilog

Libraries: Matplotlib, Keras, Scikit-Learn

Tools: HSPICE, ModelSim, Xilinx ISE, Quartus, gem5 (learning), Edge Impulse