# Fateme Shokouhinia

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Website, Scholar, Linked-In

## EDUCATION

**SIMON FRASER UNIVERSITY (SFU)**
M.Sc. in Computer Science
Sep 2021 - Dec 2024 (expected) | Burnaby , BC, Canada

**AMIRKABIR UNIVERSITY OF TECHNOLOGY (AUT)**
M.Sc. in Computer Engineering
Sep 2019 - July 2021 | Tehran , Iran

**SHARIF UNIVERSITY OF TECHNOLOGY (SUT)**
B.Sc. in Computer Engineering
Sep 2014 - Feb 2019 | Tehran, Iran

## GRADUATE COURSEWORK

- Basic/Advanced Computer Architecture
- Several System Design Courses and Labs
- Basic/Advanced Object-Oriented Programming
- Operating Systems
- Basic/Advanced Computer Networks

## SKILLS

***Programming***
*Advanced:*
• C, C++, Python, VHDL, Verilog
*Familiar:*
• Matlab, Golang, HTML/CSS
***Architecture/System Simulation Tools:***
• Gem5, ZSim
• Ramulator-PIM, DAMOV
***Others***
• Scripting, Git
• Unix/Linux/Windows

## AWARDS

- 7 **Graduate Fellowship** Awards from SFU (2021 - 2024)
- Ranked 1st in my master's class at AUT, with a GPA of 19.49/20 (2019)
- Won the bronze medal in the national Chemistry Olympiad (2012)

## PUBLICATIONS

- Elham Cheshmikhani, Fateme Shokouhinia and Hamed Farbeh, 2024, "A Low-Cost Fault-Tolerant Racetrack Cache Based on Data Compression," in IEEE Transactions on Circuits and Systems II: Express Briefs, DOI.
- Meisam Abdollahi, Mohammad Baharloo, Fateme Shokouhinia, and Masoumeh Ebrahimi, 2021, "RAP-NoC: Reliability Assessment of Photonic Network-on-Chips, A simulator". In Proceedings of ACM International Conference on Nanoscale Computing and Communication (NANOCOM '21), DOI.

## RESEARCH EXPERIENCE

**RESEARCH ASSISTANT** | Supervisor: Alaa Alameldeen | Sep 2021, present

- Reliability and Performance Improvement in Processing-In-Memory (PIM) Applications.
- Used several PIM system simulators like Ramulator-PIM and DAMOV benchmark suite.

**RESEARCH ASSISTANT** | Supervisor: Hamed Farbeh, Amirkabir University of Technology, Tehran, Iran | Sep 2019 - July 2021

- Reliability Improvement in Domain-Wall based Cache Memories.
- Applied Data Compression to Domain-Wall based caches to enable the usage of efficient and strong Error Correction Codes.
- Used Gem5 simulator and SPEC CPU 2006 benchmark suite.
- Our work was published in IEEE TCAS II: Express Briefs, DOI.

**STUDENT RESEARCHER** Institute for Research in Fundamental Sciences, Tehran, Iran | Feb 2019 - July 2019

- Implemented an analytical simulator to evaluate the reliability of different 2D optical network-on-chip architectures and data traffic.
- Used Python as the main programming language. The simulator can be found on my Github.
- Our work was published in Proceedings of ACM NANOCOM '21: DOI.

## PROJECTS

- Implementing a tournament branch predictor (TAGE vs Multiperspective Perceptron) using Gem5 for the advanced computer architecture course at SFU.
- Working with Arduino-Uno chip for temperature reading for hardware lab at SUT.
- Designing Mini-MIPS Processors using Verilog for computer architecture course at SUT.

## TEACHING EXPERIENCE

**TEACHING ASSISTANT - SFU**

| Course Name | Instructor(s) |
|---|---|
| Introduction to Computer Systems | Prof. A. Alameldeen, Prof. A. Shriraman |
| Computer Simulation and Modelling | Prof. A. Alameldeen |
| VLSI Systems Design | Prof. A. Ahari Kaleibar |