Ali Imangholi

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Summary

I am Ali Imangholi, a research assistant at the University of Tehran, specializing in efficient and reliable embedded systems and exploring the intersection of Machine Learning algorithms and digital systems.

Education

University of Tehran, Tehran, Iran (*ranked 2nd in Iran*) Sep. 2018 - July 2023

B.Sc. in Electrical Engineering (Digital Systems)

- CGPA: 17.11/20 (3.39/4.0)
- GPA (last 71 course credits): 3.66/4
- Thesis: Hardware Trojan Detection Using Machine Learning Algorithms
- Advisor: Prof. Siamak Mohammadi (Associate Professor)

Nemooneh Dolati Shahid Faraj, Tehran, Iran Sep. 2014 - June 2016

Diploma in Mathematics and Physics' Discipline

- CGPA: 18.68/20

research interests

- Embedded Systems
- Reconfigurable Computing and FPGAs
- ASIC Design
- Computer Architecture
- Hardware Trust
- IoT Devices
- Hardware Accelerators
- Machine Learning

Honors and Awards

- Excellent student at the University of Tehran for six semesters (GPA>17/20)
- FOE award recipient from the University of Tehran (ranked 2nd by the end of the first two semesters)
- Fully Funded Scholarship from the University of Tehran (Tuition Fee Waived)
- Receive excellent grade on Bachelor's final project (20/20 (4/4))

Publications

- **A. Imangholi***, M. Hashemi*, A. Momeni, S. Mohammadi and T.E. Carlson. FAST-GO: Fast, Accurate, and Scalable Hardware Trojan Detection using Graph Convolutional Networks. International Symposium on Quality Electronic Design (ISQED), 2024 (submitted)
(* equal contribution)

Academic Experiences

Research Assistance

Dependable Systems Design Lab (DSD Lab), Tehran, Iran *July 2022 - Present*

- Supervisor: Prof. Siamak Mohammadi (Associate Professor)
- employing a machine learning-based technique to detect Hardware Trojans at the gate-level netlists of integrated circuits.
- a research paper has been submitted based on the achieved results.

Teaching Assistance

- *Electrical Circuits I,* ***Chief TA*** *Jan. 2023 - July 2023*
  - Instructor: Prof. Shaghayegh Vahdat (Assistant Professor)
- *Core-based Embedded System Design,* ***Chief TA*** *Jan. 2023 - July 2023*
  - Instructor: Prof. Ahmad Shabani (Ph.D.)
- *Digital Systems Laboratory II,* ***Lab TA*** *Jan. 2023 - July 2023*
  - Instructor: Prof. Saeed Safari (Associate Professor)
- *Electronic System Level Design,* ***TA*** *Jan. 2022 - July 2022 & Jan. 2023 - July 2023*
  - Instructor: Prof. Bijan Alizadehmalafeh (Associate Professor)
- *FPGA-Based Embedded System Design,* ***TA/Lab TA*** *Sep. 2022 - Jan. 2023*
  - Instructor: Prof. Bijan Alizadehmalafeh (Associate Professor)
- *Electrical Measurement,* ***Chief TA*** *Jan. 2022 - July 2022*
  - Instructor: Prof. Amir Abbas Shaygani Akmal (Associate Professor)

Selected Courses

- Core-based Embedded System Design
  Grade: 20/20 (4/4)
- Digital Electronics Circuit
  Grade: 20/20 (4/4)
- FPGA-Based Embedded System Design
  Grade: 18.1/20 (4/4)
- Digital Systems II
  Grade: 17.5/20 (4/4)
- Digital Systems Laboratory II
  Grade: 19.6/20 (4/4)
- Foundations of Information Technology
  Grade: 20/20 (4/4)
- Advanced Programming
  Grade: 17.5/20 (4/4)
- Discrete Mathematics
  Grade: 19.55/20 (4/4)
- Numerical Computation
  Grade: 20/20 (4/4)
- Linear Control Systems
  Grade: 20/20 (4/4)

Professional Skills

Software Programming Languages: MATLAB, C++, Python
Hardware Programming Languages: Verilog HDL, System Veriolg HDL
Simulators: Modelsim, Quartus, Simulink, PSPICE, HSPICE, LTSPICE
Tools: L-Edit, S-Edit
OS: Unix-based OS, Microsoft Windows
Applications: Microsoft Word, PowerPoint, Excel

Selected Projects

- ARM Processor: Design and Implementation on Cyclone V FPGA
  Programing Language: Verilog
  Advisor: Prof. Saeed Safari(Associate Professor)

- UART and SPI Communication Protocols: Design and Implementation on Cyclone V FPGA
  Programing Language: Verilog
  Advisors: Prof. Bijan Alizadeh(Associate Professor) & Prof. Ahmad Shabani(Ph.D.)

- FIR Filter: Design and Implementation on Cyclone V FPGA
  Programing Language: Verilog
  Advisor: Prof. Bijan Alizadeh(Associate Professor)

- Gate-Level Simulator: Design
  Programing Language: C++
  Advisor: Prof. Zainalabedin Navabi(Professor)

- More projects are available on *my personal website*.

Memberships

- Volunteer member of the International Red Crescent/Red Cross Movement

Language

- English: **IELTS Academic Scores:** *L: 8.5, R:8, S:7, W:6.5, Overall:7.5* *Nov. 7, 2023*

- Persian: Native

References

- Will be available upon request