

# Ali Imangholi

🌐 <https://ali-imangholi.github.io> ✉ [imangholiali2000@gmail.com](mailto:imangholiali2000@gmail.com) 🐙 <https://github.com/Ali-Imangholi>

## SUMMARY

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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

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**University of Tehran, Tehran, Iran (*ranked 2<sup>nd</sup> 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)

**Nemoooneh Dolati Shahid Faraj, Tehran, Iran**

Sep. 2014 - June 2016

*Diploma in Mathematics and Physics' Discipline*

- CGPA: 18.68/20

## RESEARCH INTERESTS

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|--------------------------------------|-------------------------|
| • Embedded Systems                   | • Hardware Trust        |
| • Reconfigurable computing and FPGAs | • IoT Devices           |
| • ASIC design                        | • Hardware accelerators |
| • Computer architecture              | • Machine Learning      |

## HONORS AND AWARDS

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

## PUBLICATIONS

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- **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

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### Research Assistant

*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 Trojan at gate-level netlists.
- a research paper has been submitted based on the achieved results.

### Teaching Assistant

- *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

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

## SOFTWARE

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Software Programming Languages: MATLAB, C++, Python

Hardware Programming Languages: Verilog HDL, System Verilog 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

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- 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

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- volunteer member of the International Red Cross and Red Crescent Movement

## LANGUAGE

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

## REFERENCES

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- Will be available upon request