

# MOHAMAD CHAMANMOTLAGH

BSc Student in the Department of Computer Engineering at the Amirkabir University of Technology

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## EDUCATION

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**Bachelor of Science in Computer Engineering** *2017 - Expected graduation at March 2022*  
**Amirkabir University of Technology (Tehran Polytechnic)**

**GPA:** 17.17/20 (3.56/4.00)

Last two year's GPA: 18.19/20 (3.77/4.00)

**Thesis Topic:** Implementation of a Data Communication System Between a Microcontroller and an FPGA Using CAN-FD Bus Interface and CANOpen Protocol

**Thesis Supervisor:** Prof. M. Mehdi Homayounpour

## RESEARCH INTERESTS

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- Embedded Systems
- Internet of Things
- Field Programmable Gate Array (FPGA)
- Computer Architecture
- Operating Systems

## RESEARCH EXPERIENCE

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**IoT Lab, Amirkabir University of Technology** *November 2021 - Present*  
*Part-time Undergraduate Research Assistant*

**Project: LoRaWAN Optimization.**

- Investigated the effects of different Channel Access Protocols over LoRa on reducing the packet collision rate of the whole network

**CE Department, Amirkabir University of Technology** *March 2021 - November 2021*  
*Part-time Undergraduate Research Assistant*

**Research Topic: Automotive Embedded Systems.**

**Supervisor:** Prof. M. Mehdi Homayounpour.

- Combined understandings of Microcontrollers, FPGAs, DSPs, and interfaces like CAN into designing a Real-Time Fail-Safe System
- Researched methods of Embedded Systems Distribution, including Hardware, Interfaces, and Protocols with a focus on the Automotive Industry

**CE Department, Amirkabir University of Technology** *January 2020 - June 2020*  
*Part-time R&D Assistant*

**Project: Android TV Optimization.**

**Supervisor:** Prof. Hamed Farbeh.

**Funded by** Hadish Sabz Parseh Co.

- Improved Remote-Control Movement Detection and Boot-Up Speed
- Gained hands-on experience with Kernel Programming and Cross-compilers
- Reviewed design documents and standards in order to modify operating system modules and applications
- Served as a member of an academic group of five members in collaboration with Hadish Sabz Parseh Co.

## TEACHING EXPERIENCE

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**Amirkabir University of Technology**  
*Teaching Assistant*

*2020 - Present*

Course: **Internet of Things**

Fall 2021

Supervisor: Prof. Mehdi Rasti

Key responsibilities: Creating tutorials, providing guidance for students, and developing and grading assignments

Course: **Microprocessor and Assembly Language**

Fall 2020 - Spring 2021

Supervisor: Prof. Hamed Farbeh

Key responsibilities: Creating tutorials, developing lecturer's course materials, providing guidance for students, and developing and grading assignments

Course: **Operating Systems**

Spring 2021

Supervisor: Prof. Seyyed Ahmad Javadi

Key responsibilities: Providing guidance for students and developing and grading assignments

Course: **Computer Architecture**

Spring 2020

Supervisor: Prof. Hamed Farbeh

Key responsibilities: Holding online classes, providing guidance for students, and developing and grading assignments

## PROFESSIONAL EXPERIENCE

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**Hadish Sabz Parseh Co.**  
*Technical Leader*

*June 2020 - March 2021*

- Led a software development team and tried to meet the business deadlines, including development and deployment of a Resource Planning application inside the company
- Worked on multiple projects, including Digital Signage R&D, Android TV Optimization, and a series of web-based ERP products

**Medycall Startup.**  
*Web Developer*

*August 2019 - November 2019*

- Developed Client-side code of a web-based system as a member of a startup team
- Gained experience with working in a highly agile team

**Paydar Bonyan Farayand Co.**  
*Web Developer*

*February 2019 - Nov 2019*

- Participated in the development of both Server-side and Client-side components of a web-based system as a member of a professional team

## TECHNICAL SKILLS

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**Programming Language**

C/C++, Java, Python, ARM Assembly, C#, JS

**Design and Development Tool**

Vivado, Quartus Prime, µVision, Proteus, Altium Designer

**Simulation Tool**

OMNeT++, ModelSim

**HDL**

Verilog, VHDL

**Machine Learning**

TensorFlow, NumPy, MATLAB

**GPU Programming Framework**

CUDA, OpenCL

**Virtualization Tool**

Docker, VMware

**Database**

MySQL, PostgreSQL, MongoDB

## RELEVANT COURSEWORK

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- Embedded and Real-Time Systems
- Microprocessors and Assembly Language
- Programmable Digital Systems Design
- Interface Circuit Design
- Digital Electronics
- Computer Architecture
- Operating Systems
- Internet of Things
- Signals and Systems
- Computer Networks
- Information Security
- Web Programming
- Multicore Programming

## LANGUAGES

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- English (Proficient)  
**TOEFL iBT score:**
  - **112 Overall**
  - 29 in Reading, 30 in Listening, 26 in Speaking, and 27 in Writing
- Persian (Native)

## HONORS AND AWARDS

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**Ranked in the top 0.2% in the Iranian National Universities Entrance Exam among more than 150,000 participants.**

*2017*

## PROJECTS

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Open source projects are available at <https://github.com/MohamadCM>.

## REFERENCES

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**Prof. M. Mehdi Homayounpour**  
· Relation: Research and Thesis Supervisor

E-mail: [homayoun@aut.ac.ir](mailto:homayoun@aut.ac.ir)

**Prof. Hamed Farbeh**  
· Relation: Teaching and R&D Supervisor

E-mail: [farbeh@aut.ac.ir](mailto:farbeh@aut.ac.ir)

**Prof. Mehdi Rasti**  
· Relation: Teaching Supervisor and Academic Advisor

E-mail: [rasti@aut.ac.ir](mailto:rasti@aut.ac.ir)

**Prof. Seyyed Ahmad Javadi**  
· Relation: Teaching Supervisor

E-mail: [sajavadi@aut.ac.ir](mailto:sajavadi@aut.ac.ir)

\* Academic transcript, other references, and further information are available upon request.