

Pasha Barahimi

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Senior student at School of ECE, College of Engineering, University of Tehran
Currently living in Tehran, Iran

EDUCATION

2020 - Present **B.Sc. in Computer Engineering**; University of Tehran GPA: 19.43/20 (4.0/4.0)
2017 - 2020 **Diploma in Mathematics and Physics**; Danesh High School GPA: 19.88/20

RESEARCH EXPERIENCE

Model Checking Internship at Max Planck (SWS) Institute July 2023 - September 2023

The internship was under the supervision of [Prof. Rupak Majumdar](#). We worked on implementing a DPOR algorithm named [TruSt](#) in the Lincheck framework which is a model-checking tool for testing concurrent data structures in JVM-based languages such as Java and Kotlin. The repository can be found [here](#).

TEACHING EXPERIENCE

Head Teaching Assistant

Advanced Programming; [Prof. R. Khosravi](#)
FALL 2023, SPRING 2024

Teaching Assistant

Advanced Programming; [Prof. R. Khosravi](#)
Computer Assignment Designer
SPRING 2022, FALL 2022, SPRING 2023

Teaching Assistant

Systems Analysis and Design; [Prof. R. Khosravi](#)
Mentor
SPRING 2024

Teaching Assistant

Algorithm Design; [Prof. M. J. Dousti](#)
Homework and Computer Assignment Designer
FALL 2022, FALL 2023

Teaching Assistant

Machines and Language Theory; [Prof. H. Hojjat](#)
Homework Designer
FALL 2022, SPRING 2023, FALL 2023

Teaching Assistant

Artificial Intelligence; [Prof. H. Fadaei](#), [Prof. Y. Yaghoobzadeh](#)
Homework and Computer Assignment Designer
SPRING 2023, FALL 2023, SPRING 2024

Teaching Assistant

Data Structures and Algorithms; [Prof. H. Faili](#)
Quiz Designer
FALL 2022

RESEARCH INTERESTS

- Distributed Systems
- Operating Systems & Computer Networks
- Blockchains
- Computer Security

HONORS AND AWARDS

2023 **Ranked 1st in junior year of bachelor's degree** GPA: 19.86/20 (4.0/4.0)

2022	Ranked 1 st in sophomore year of bachelor's degree	GPA: 19.50/20 (4.0/4.0)
2021	Ranked 2 nd in freshman year of bachelor's degree	GPA: 19.01/20 (4.0/4.0)
2020	Ranked 161 in University Entrance Exam among over 160,000 participants	

WORK EXPERIENCE

Junior Software Developer at Sotoon Oct 2022 - Jan 2024

- I had a few months to participate in the Database team's mentorship to learn about Kubernetes controllers and Postgres databases.
- I joined the Security team and had maintaining tasks on Husky CI (which orchestrates security tests) and development tasks on the Bug-Bounty backend.
- After a few months, I changed my team to the Integration team. I had development tasks on the Announcer (which is used to announce on Zoho, Slack and Email) backend and the IAM service.

SRE Intern at Sotoon Jun 2022 - Sep 2022

In this internship, I learned how to work with Git, Docker, Kubernetes, Redis, Grafana, Prometheus, MakeFile and Ansible. Also, I learned a great deal about teamwork in software development.

SELECTED PROJECTS

API Gateway Golang

A group project developed for the Sotoon internship

My Tasks:

- Fake upstreams and deploying them in Kubernetes using Ansible
- Rate limiting using Redis
- Monitoring using Prometheus and Grafana
- Configuration live update

Distributed Systems Course Projects Golang

- gRPC and Protobuf
- Concurrency in Golang
- Setting up GlusterFS on Xen

Introduction to Cryptocurrencies Course Projects Python

- Generating wallet credentials (private/public keys and address) and vanity address
- Creating valid transactions in Bitcoin Testnet
- Creating a Bitcoin block with a single transaction

Operating System Lab Projects C **Operating System Course Projects** C & C++

- | | |
|---|---|
| <ul style="list-style-type: none"> • Introduction to xv6 operating system • System Calls • Scheduling • Synchronization | <ul style="list-style-type: none"> • Socket Programming • Pipe • Multi-Threading |
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Computer Networks Course Projects

C++

- Socket Programming
- Wireless LAN Simulation (NS3)
- Routing Protocols (Link State & Distance Vector)
- TCP Congestion Control (TCP Reno/NewReno/BBR)

Network Security Course Projects

- Launching HTTP and HTTPS servers using Apache and utilizing Wireshark for capturing packets
- Encryption and Decryption using OpenSSL library
- Github OAuth and JWT
- Phishing demo using DHCP snooping and DNS spoofing, available [here](#)

Cyber-Physical Systems Course Projects

Qt, C++

- Access Control Management over IOT using Arduino, Websocket Server, and HTTP Server
- Motion Based Authentication in Android using Gyroscope and Accelerometer sensors

Compiler Course Projects — LogicPL Compiler

Java

- Phase 1: Lexical analyzer and syntax analyzer
- Phase 2: Abstract syntax tree, node visitor pattern, symbol table, and name analyzer
- Phase 3: Type analyzer
- Phase 4: Code generation (Java Bytecode)

Software Testing Course Projects

Java

Database Lab Projects

SQL & NoSQL

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|--------------------|--------------------|
| • Unit Testing | • ER Diagram & SQL |
| • Mocking | • Neo4j |
| • Graph Coverage | • MongoDB |
| • API Testing | • Elasticsearch |
| • Mutation Testing | • Redis |
| • BDD | |

LANGUAGES

Persian Native

English Upper Intermediate