Seyed Mahdi Hosseini

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EDUCATION

University Of Tehran
Tehran, Iran

BSc. in Computer Engineering
Sep. 2018 – Present

- GPA : 18.87 / 20
- Selected Courses:

Cryptocurrencies(20/20)
Advanced Programming(20/20)
Computer Networks(19.1/20)
Operating Systems(19.3/20)
Artificial Intelligence(19.75/20)
Probability and Statics(19.3/20)
Distributed Systems(19.6/20)
Computer Network Security(18.2/20)
Database Design(19.1/20)

Allame Helli Tehran Highschool
Tehran, Iran

Diploma In Mathematics And Physics
Jul. 2014 – Jul. 2018

- GPA : 19.77 / 20
- As a part of the National Organization for Development of Exceptional Talents (NODET)

RESEARCH INTERESTS

- Blockchain Technology
- Network Systems
- Graphs and Mathematics
- Machine Learning
- Distributed Systems
- Operating Systems
- Network Security
- Artificial Intelligence
- Statistics process and optimization

RESEARCH EXPERIENCE

Research Intern at EPFL
Lausanne, Switzerland

Under supervision of Prof. K. Argyraki
Jul. 2022 – Sep. 2022

- This research explores whether it is feasible to improve transparency without having to trust the networks and without imposing expensive sampling procedures on networks, this way lowering the deployment cost of transparency proposals.

Research Assistant on Blockchain
Tehran, Iran

Under supervision of Dr. B. Bahrak and Dr.P.Shariatpanahi
Apr. 2021 – Present

- Conducting a research on the evaluation of Bitcoin Lightning Network's channels lifespan.
- Conducting a research on the he limit on the throughput of the Lightning Network
- Conducting a research on the detection of Monero miners by machine learning approach.

Intern in Multi Media Lab
Tehran, Iran

University Of Tehran Multi Media Lab
Jul. 2019 – Sep. 2019

- Tried to fetch data from HEVC encoder in order to optimize encoding process.

PUBLICATIONS

Modeling Effective Lifespan of Payment Channels
Submitted

S.Zibakhsh, S.M.Hosseini, Prof.B.Bahrak, Prof.S.Shariatpanahi
2022

- In this paper, we developed a mathematical model to predict the expected effective lifespan of each channel based on the network's topology and payment size.

When the Lightning Network reaches its limit
Under Preparation

S.M.Hosseini, S.Zibakhsh, S.H.Dehshali, Prof.B.Bahrak, Prof.S.Shariatpanahi
2022

- In this paper we developed a mathematical model that proposes a formulated limitation on the throughput of the Lightning Network from the basic parameters of the network.

LANGUAGES

English Advanced (The TOEFL exam will be taken on November 12th.)
Persian Native

TEACHING EXPERIENCE

Teaching Assistant — Spring 2022
Cryptocurrencies — Dr.P.Shariatpanahi

Teaching Assistant — Spring 2022
Database Design — Dr.A.Shakery

Lab's Supervisor — Fall 2021
Introduction to Computing Systems and Programming — Dr.H.Moradi, Dr.M.Tavassolipour

Teaching Assistant — Fall 2020
Introduction to Computing Systems and Programming — Dr.H.Moradi, Dr.M.R.Hashemi

Teaching Assistant — Spring 2021
Formal Languages and Automata Theory — Dr. H. Hojat

Teaching Assistant — Spring 2021
Compiler Design and Programming Languages — Dr. F.G.Esfahani

Teaching Assistant — Fall 2020
Engineering Probability and Statistics — Dr. B. Bahrak

TECHNICAL SKILLS

Languages Python, C/C++ ,SQL, JAVA,Verilog, Solidity, GO, R, Shell Script, LATEX, Assembly, HTML, CSS
Frameworks ReactJS, JUnit, Spring, Maven
Tools Git, Jupyter, MakeFile, IntelliJ, Docker, VSCode, Postman, Wireshark, NS3, ModelSim, Quartus
Operating Systems Ubuntu Linux, Kali Linux, Microsoft Windows, MAC OS

HONORS, AWARDS

Ranked 1 among all of Computer Engineering students, University of Tehran — Spring 2019, Spring 2022
Member of Sumer@EPFL Research Program — summer 2022
Ranked 2 among all of Computer Engineering students, University of Tehran — 2018 - Present
Silver Medal In the 30th Iranian National Physics Olympiad — 2017
Becoming a Member of Iran's National Elites Foundation(NODET) — 2017 - Present
Ranked Top 0.7 in Konkur(Iranian University Entrance Exam) among more than 160,000 participants — 2018

NOTABLE ACADEMIC PROJECTS

Bitcoin Testnet With Python — Cripto Currency
Implementing variant type of Bitcoin transactions using Python Bitcoin library — Spring 2021

Leader Election Algorithms Implementation — Distributed Systems
Implementing multiple leader election algorithms using python and rabbitmq. — Fall 2021

New Features for Xv6 Operating System — Operating Systems
Implementing new features, including new system calls, CPU scheduling, and memory management in C/C++. — Fall 2020

Multicast Over The Network — Computer Networks
Implementing DVMRP algorithm and IGMP protocol over a network of clients, servers and routers in C++. Spring 2021

IEMDB — Internet Engineering
Creating an online movie website like IMDB by java, React, Docker, Kubernetes, JUnit — Spring 2022

Sophia Compiler — Compiler Design and Programming Languages
A compiler for new object oriented Language called SOPHIA. — Fall 2020

Image Classifier — Artificial Intelligence
Two projects one making a NN group up, one using Tensorflow. — Spring 2021

Multithread Price Estimator — Operating Systems
Implementing multithreaded program to estimate price of cars in C++. — Fall 2020

Mips Pipeline Processor — Computer Architecture
Implementing a pipeline processor using Verilog. — Spring 2020

REFERENCES

Available upon request