ALIREZA ARBABI

School of Electrical and Computer Engineering ◇ University of Tehran

[Email](#) ◇ [WebPage](#) ◇ [Linkedin](#) ◇ [GitHub](#)

EDUCATION

University of Tehran 2020 - present(Expected July 2024)

B.Sc. in Computer Engineering (Software) University of Tehran

- Total GPA: 17.83/20 (3.81/4) (Facluty Average: 15.10/20)
- Selected courses: Artificial Intelligence (20/20), Cryptocurrencies (19.8/20), Data structure and Algorithm (18.9/20), Design of Algorithm (18.25/20)

Allameh Tabataba'i high school 2018 - 2020

Diploma in Mathematics and Physics

- Total GPA: 19.56/20

RESEARCH INTERESTS

- Security and Privacy / Applied cryptography
- Computer Networks
- Blockchain Technology / Decentralized Systems
- Artificial Intelligence and Machine Learning

PUBLICATIONS

[RPoA: Redefined Proof of Activity](#)

S. kamali, S. Shabihi, T. Fakharian, **A. Arbabi**, P. Tajmehrabi, M. Saadati, B. Bahrak.

RESEARCH/WORK EXPERIENCE

Research Assistant July 2023 - Present

ACIS Lab, University of Victoria *Victoria, Canada*

Under supervision of [Prof. Homayoon Najaran](#)

Our research focuses on investigating the obstacles and constraints within existing cryptocurrency mixing services. We analyze a range of mixers, including traditional ones in bitcoin and advanced ZKP-based mixers, as well as secure coins. The objective is to assess the capabilities of each mixer and determine the most effective method for achieving anonymous mixing.

Research Assistant Jul 2022 - Present

Data Analysis Lab, University of Tehran *Tehran, Iran*

Under supervision of [Prof. Behnam Bahrak](#)

We were working on an alternative consensus protocol based on Proof of Activity to combine the benefits of using both the PoS and PoA protocols and also reduce the power costs of the original PoA consensus. As a proof of concept, we implemented a cryptocurrency for storing files (Blockchain-based Decentralized file sharing system) called Crystalline.

SKILLS

Programming: C/C++, Python, LaTeX, JavaScript(Node JS), R, Verilog
Paradigms: Git(Version Control), Docker, NoSQL/SQL database systems, REST-API design, OOP, MakeFile
Operating Systems: Ubuntu Linux, Microsoft Windows

TEACHING ASSISTANT EXPERIENCE

Artificial Intelligence Spring 2023
Prof. Yadollah Yaghoobzadeh and *Dr. Hakimeh Fadaei*
ML computer assignment and homework designer

Engineering Probability and Statistics Fall 2022
Prof. Behnam Bahrak
Homework designer

Data Structure and Algorithm Fall 2022
Prof. Hesham Faili
Homework/Exam grader

Introduction to computing systems and programming Fall 2022
Prof. Hadi Moradi and *Prof. Mahmoodreza Hashemi*
ICSP Laboratory mentor, Computer Assignment grader

ACADEMIC PROJECTS

Crystalline
Crystalline is a cryptocurrency powered by Redefined proof of activity(RPoA), developed as a proof of concept on pure python.

XV6 Modernized
A customized version of the MIT xv6 operating system, with significant modifications in CLI, process scheduling, semaphores, system calls, and the memory management scheme; which make it perform on par with modern Linux-based systems in many aspects.

Socket-Based Hotel Management System
A hotel management system implemented in c++, consists of a server and multiple clients which communicate with each others using sockets.The server handles requests from clients and manages the hotel reservation database. The coding was done based on the OOP design.

Node social media
This was a final project of the backend summer course at the University of Tehran, ACM chapter. In this course, I learned the fundamental of backend programming, NoSQL databases(MongoDB), Computer networks, and how to use documentation in projects. The project was coded with Node JS environment.

MIPS Processor
An implementation of MIPS processor with single/multi-cycle architecture based on Verilog-HDL programming language as a Final project of the Computer Architecture course. This processor has 16 different operations to perform Tasks.

HONORS AND AWARDS

- **Being in (Top 0.6%) in Konkour**, National Organization of Educational Testing (NOET)
- **Received scholarship**, Supporter Foundation of the University of Tehran

LANGUAGES

English Advanced
Persian Native