

# Erfan Vahabi Amlash

SECURITY AND PRIVACY ENTHUSIASTIC

Tehran, Iran

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## Education

### University of Tehran

B.S. IN ELECTRICAL ENGINEERING (GPA 3.63/4 (17.47/20))

### Allameh Helli 2 (NODET)

DIPLOMA OF MATHEMATICS AND PHYSICS

Tehran, Iran

2017 - 2022

Tehran, Iran

2013 - 2016

## Research interests

Computer Architecture, Hardware Security, Binary Analysis, Reverse Engineering, Software Engineering

## Experience

### University of Tehran

TEACHING ASSISTANT

- Computer Architecture Lab - Fall 2022
- Linear Algebra - Fall 2021
- Physics II and I - Fall and Spring 2021
- Calculus - Fall 2021
- Signal And Systems - Spring 2020
- Computer Networks - Fall 2020
- Introduction to Computer Programming - Spring 2021

Tehran, Iran

### Sharif University of Technology

TEACHING ASSISTANT

- Computer Architecture - Fall 2022

Tehran, Iran

### Paezan Game Studio

BACK-END DEVELOPER AND DEVOPS ENGINEER

- Developed and maintained Node.js back-end systems for game rooms and matchmaking services. Leveraged WebSockets for real-time communication.

Tehran, Iran

Sep. 2024 - Present

### NAAD Secure

C++ DEVELOPER

- Refactored a 10,000-line C++ code base implemented within the tun/tap driver from kernel-land to user-land to improve its performance, scalability, and maintainability. Used design patterns and clean architecture principles to design the new code base, and followed modern C++ standards and clean code tips to develop effective and robust code.
- Added commands to a CLI app that is using C++ CLI11.
- Wrote unit tests using GTests and GMock frameworks.

Tehran, Iran

Dec. 2022 - March 2024 (18 months)

### Mehbang Holding - Datis

EMBEDDED SYSTEMS DEVELOPMENT INTER (ARM)

- Learned ARM microcontroller basics, specially STM32F series. Used Keil and ST development tools to practice more on STM32F103 peripherals.
- Simulates circuits with and without microcontrollers with proteus.

Tehran, Iran

Jun. 2020 - Sep. 2020 (3 months)

### Kred.ir

CO-FOUNDER & SOFTWARE ENGINEER & GRAPHIC DESIGNER

- Utilized NodeJS, Express, MongoDB, Axios, and git to develop a Telegram bot to get time-limited quizzes from users.
- Configured the Ubuntu VPS from scratch to deploy the source code before moving it to Heroku servers.
- Deployed the source code to Heroku servers because it offered free features and was easier to focus on the bot's primary function.
- Used Adobe XD and Adobe Photoshop to design UI/UX of the website and to create posters and infographics.

Tehran, Iran

Feb. 2019 - Oct. 2020 (20 months)

## Skills

### Web Development

NodeJS, Express, Axios, Socket-io

### Database

MySQL\*, MongoDB\* (\*a little experienced)

### Common Tools

Git, Docker

### Design Tools

Adobe Photoshop

### Programming Languages

C/C++, Type Script (TS & JS), Python, PHP, Java, C#

### Mathematics & AI

Scikit-Learn, Numpy, Pandas, Pytorch\*, MATLAB (\*a little experienced)

### Embedded Systems

ARM, AVR, Arduino, Raspberry Pi, NodeMCU, Proteus

# Projects

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## Product Recommender

NLP, NAIVE BAYES, WEB CRAWLING, PANDAS, NUMPY, MATPLOTLIB, SCIKIT-LEARN, GOOGLE COLAB

- Implemented a naive Bayes classifier to classify input text and recommend a product.
- > Recommender [\[Colab\]](#) : Recommends a product from Digikala, given an input text.
- > Product Crawler [\[Colab\]](#) : Crawls Digikala categories and products, to recommend after classification
- > Naive Bayes Implementation [\[Colab\]](#)
- > Preprocessing [\[Colab\]](#)

## Music Finder (Signals and systems course project)

University of Tehran

SCI-PY, NUMPY, MATPLOTLIB, FFT, SPECTOGRAM

- Finds the spectrogram of the input voice and extracts its features.
- Uses these features to find the most similar music from the database.

## Telegram Bot Development

Red Crescent

NO-JS, EXPRESSJS, AXIOS, CANVASJS, MONGODB, HEROKU, GIT

- Built and managed the *Yaldane*, *Hamrah Sho*, *Ghargh Nashavim*, *Wetlands Campaign*, and *Covid Campaign* Telegram Bots
- Built to expand Iran's [Red Crescent](#) campaigns and inform people of their programs.
- Designed a simple microservice architecture to separate the texting server and the poster rendering server to minimize the response time and add the possibility of using multiple servers for rendering.
- Implemented a simple memory caching system to reduce database load.
- Delivered over 500,000 posters to 100,000 individual users overall.
- *Yaldane bot* rendered about 100,000 posters in 12 hours.

## Personal Tools [\[Github\]](#)

JAVASCRIPT, TAMPERMONKEY

- Implemented a number of utilities in JS, such as:
- > console.save: Saves a string to a file.
- > VEED.io Sub downloader: Downloads free auto-generated subtitles from VEED.io. It was also used in Kred to create subtitles easier.
- > UT Elearn: Improves the style and UX of university courses' website and adds a few automations to it.

## Linux IPTV and VoD

LAMP, DVB MODULE, UBUNTU, ARCH LINUX

- Used a DVB module to receive TV signals.
- Implemented a program in Ubuntu/Arch Linux to stream received signals.

## Insta Crawl [\[Github\]](#)

ELECTRONJS, JAVASCRIPT, HTML, CSS

- Developed an Instagram desktop client that adds the ability to crawl and download the most liked or commented posts from pages.

## Jupyter for a remote queued HPC

Sharif University of Technology

BASH, SSH

- Found a way to tunnel the Jupyter running on the server's localhost specific port to the remote client's localhost through the SSH connection.
- Created easy-to-use bash scripts to run the notebooks with the HPC capabilities, such as GPUs and multicore CPUs.
- Wrote a comprehensive write-up for students and the HPC center to help them understand the procedure and use it for their own purpose.

# Voluntary Experience

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## KaarYar Institute

Tehran, Iran

TEACHING ASSISTANT OF WEB DEVELOPMENT PROGRAM

Apr. 2021 - Jan. 2023 (22 months)

- Held weekly online problem-solving sessions.
- Motivated students from underprivileged communities to believe in themselves and work towards improving their quality of life.
- Assessed students' final projects and presentations.
- Mentored trainees in securing their first job or project opportunities.

# Hobbies

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## Light is Everything Photo Walk

Tehran, Iran

PHOTOGRAPHY

Sep. 2024 - Present (61 weeks)

- Explored the streets during weekend mornings, capturing moments through my phone lens.
- Explored the intricacies of light and color, constantly seeking to deepen my understanding.