

# Erfan Khadem

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*An Electrical Engineering student looking for research opportunities*

## Education



### Bachelors of Science in Electrical Engineering

Sharif University of Technology

2022 - 2026

Tehran, Iran

- Courses: Realtime Embedded Systems | Operating Systems | Cryptography | Advanced Programming



### Highschool Diploma in Physics and Mathematics

Dastgheib 1 Highschool of Shiraz

2019 - 2022

Shiraz, Iran

- Shahid Dastgheib 1 highschool is under the supervision of NODET, National Organization for Development of Exceptional Talents, and is the most prestigious highschool in south of Iran

## Professional Experience



### Embedded Hardware and Backend Developer

Home Automation Project at National Elites Foundation

2023 - Present

Tehran, Iran

- Lead a team of computer security experts, electrical engineers and developers to build home automation appliances and smart gateways using TI's Zigbee chips and Espressif System's ESP32 and ESP8266 microcontroller series
- Guide our team to implement Test-Driven Development practices and integrate solutions produced by other teams in our product.
- Coordinate efforts between our team members and set goals and deadlines according to our timeline.



### Fullstack Developer and Systems Administrator

Abarkelas

2022 - 2023

Tehran, Iran

- Develop Django backend using django-rest-framework
- Fix bugs and improve UX at our frontend using SSR and Vue.js
- Improve monitoring and alerting for our backend systems
- Implement self-healing procedures for our backend systems
- A/B test our user base to guide our product development process



### Fullstack Developer and Systems Administrator

Niroutrans Co.

2020 - 2022

Shiraz, Iran

- Complete development of an advanced monitoring system for Niroutrans' solar power plant, the biggest roof-mounted solar power plant in Iran
- Design advanced data visualization for our power plant monitoring system
- Design and implement online product documentation center to improve our customers' experience

## Projects & Associations

### Advanced Algorithms in Rust

TheAlgorithms/Rust

2022

Github

- Implement advanced graph algorithms such as centroid decomposition and max-flow.
- Implement various cryptographic algorithms including Salsa20 and HMAC.
- Improve and optimize the implementation of various algorithms like SHA256 and DSU.
- Various other improvements and implementation.

### Jungle Marble Blast Clone

er888kh/bp-cpp

2023

Github

- This was the project for our basic-programming course.
- Implemented using SDL and Dear ImGui libraries in C++.

### SSH VPN with User Management

er888kh/SSH-Liberty-Bridge

2023

Github

- Implemented in go with the user management componenet written in python.
- Has been used successfully for bypassing GFW restrictions in Iran and bringing internet freedom to the citizens.
- Integrated in hiddify's excellent GFW bypass solution.
- This has been implemented with great care regarding its security and performance and uses redis as its database

## Certificates

- 2021 Scientific Computing with Python, Free Code Camp
- 2021 Responsive Web Design, Free Code Camp
- 2021 Javascript Algorithms and Data Structures, Free Code Camp

# Skills

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**Languages** English | Persian | Arabic (basic)  
**Tech Stack** JS (Svelte/Vue.js) | Python (Pandas/Numpy/Django) | Rust | Go | C/C++ (HW/RTOS/Linux)  
**Hobbies** Mathematics | Cryptography | Bicycle | Electronics