

Sina Shiri

Electrical Engineering Graduate | Python & Embedded Systems

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Academic profile

Electrical engineering graduate with practical experience in Python, embedded interfaces and computer vision. Combines industrial development at IstaSanat with current freelance work in hardware security research. Seeking master's study that connects embedded computing, hardware/software integration and applied research, building on industrial system development and a Zynq-focused undergraduate thesis.

Research interests

Embedded and hardware systems; hardware security; computer vision on embedded platforms; intelligent sensing and monitoring; Python tools for engineering research. These interests connect an electronics background with practical software and device-integration experience.

Education

B.Sc. Electrical Engineering - Electronic Technology 2013–2016

Mohajer Technical University of Isfahan, Isfahan, Iran

GPA: **18.65/20** (original grading scale).

Thesis: "Detecting and Tracking Special Moving Objects in Public Environments on the ZYNQ platform."

Associate Degree in Electrical Engineering 2011–2013

Tabriz Technical and Vocational University, Tabriz, Iran

GPA: **17.85/20** (original grading scale).

Thesis: "Data Graph of Industrial Sensors in Noisy Environments without Distance Limit."

Technical books

- **S. Shiri** and H. Aalamshahi. *Full Reference of Raspberry Pi*, second edition. Elmiran, Tabriz, Iran, 2018. Persian-language technical book.
- **S. Shiri** and H. Aalamshahi. *Full Reference of Raspberry Pi*, Volumes 1 and 2. Elmiran / Ebadi, Tabriz, Iran, 2017. Persian-language technical books.

Selected research and development

Aerial Object Detection & Tracking

Computer-vision prototype

C++, object detection and tracking, image processing

Developed prototypes for detecting and tracking moving or selected stationary objects in aerial imagery. Contributed to invention documentation describing how image-derived information could support autonomous UAV control.

Fire & Smoke Detection

Computer-vision / ML prototype

Computer vision, neural-network prototyping, embedded camera integration

- Explored image-processing and neural-network approaches to visual fire and smoke detection.
- Worked on dataset preparation, camera integration and a monitoring interface with event handling and status display.

Industrial Alarm Monitoring System

Embedded-system integration

Python, Raspberry Pi, industrial monitoring, system integration

- Developed monitoring software for 40 alarm inputs, integrating custom electronics with operator interfaces and database-backed event records.
- Implemented standalone and local-network workflows with configurable input modes, labels and controls.

Networked Polling & RFID Applications

Distributed / embedded software

Python, RFID integration, offline operation, client/server systems

- Programmed polling clients and a central interface for status, records and reporting, including local storage during network interruptions.
- Built RFID attendance and token-distribution workflows with operator interfaces and device communication.

Professional experience

Python Programmer & Hardware Designer

2017–Present

IstaSanat Engineering Company

Developed industrial control and monitoring software and integrated hardware, user interfaces and event logging.

Freelance Python Developer & Hardware Designer

Current

Currently working independently in hardware security research. Earlier freelance projects include caller-identification and attendance applications, hardware integration and Raspberry Pi technical writing.

Technical skills

Programming: Python and C++; operator interfaces, client/server applications and data workflows.

Embedded and vision: Hardware/software integration, embedded Linux, device communication, object detection and tracking.

Hardware and design: PCB development; MATLAB, Altium Designer; experience with Zynq, Vivado, Verilog and VHDL.

Honors & distinctions

- **2016 – AUTCUP, third place:** Tele-Operated Deminer, team Red 2; Amirkabir University of Technology, Tehran.
- **2016 – AUTCUP, MAV participation:** Aras Robotics team; documented by the competition certificate.
- **2009–2010 – Provincial electronics recognition:** Recognised in the Scientific-Practical Competition and selected for the national stage.

Languages

Azerbaijani: native; Persian: bilingual; Turkish: full professional proficiency; English: professional proficiency. Levels are self-assessed.