

# OMID BAZANGANI | RESUME

## » Embedded System Engineer «



### Profile:

Experienced and ambitious Embedded Software Engineer with a strong passion for my field. Self-motivated with attention to detail and excellent problem-solving skills. Collaborative team player with a friendly demeanour and a touch of humour while maintaining a dedicated and serious approach to work. I seek opportunities to grow and contribute my expertise to cutting-edge projects within the industry.

- » **++Skills:** Embedded system software/hardware design, Embedded C, Low-Level Debugging with GDB, Git, MISRA C, CERT
- » **+Skills:** Python, Labview, Linux, QEMU, Machine Learning, Security analysis (Side-Channel)
- » **Skills:** C++, Qt Framework, RTOS(Free RTOS & RX), Assembly ARM Cortex-M

### » PhD On Embedded System Security (Radboud University, Netherlands) 2020 - now

» **PhD Research:** My PhD research focuses on creating a versatile side-channel simulator using the microarchitectural features of ARM Cortex-M series microcontrollers. This includes instructions, pipeline, operand values, and more to comprehensively understand processor behaviour. I've gained expertise in Cortex-M architectures, assembly coding, and advanced debugging techniques, with experience in emulating ARM microcontrollers with QEMU and developing cryptographic algorithm firmware in embedded C. This work aims to facilitate various side-channel attack assessments, enhancing embedded system security.

### » Senior Embedded Software Engineer (SRC- Iran) 2015 - 2018

» **SRC Project:** Development of SEPAHTAN Project, a significant national FMS(Fleet Management System) initiative in Iran, based on ARM Cortex-M4 Microcontroller.

» **Experiences and Skills:** Embedded Software Architecture, Embedded Hardware Design considering mass production issues, Embedded Software Implementation (C/C++, Python), TCP, FTP, FOTA, CAN, FMS-V3, AUTOSAR, CMSIS, MISRA C, git, IAR-IDE, Arm Cortex MO+, Arm Cortex-M4, Embedded Software Static and Dynamic Test.

### » Embedded System Engineer (Freelance - Iran) 2012 - 2015

#### » Projects:

- ✓ Robotic arm with 5DOF (Degrees of Freedom), Geshmvoltage company, Tehran-Iran
- ✓ Develop specific libraries for UART, SPI and LCD on ARM Cortex-M3, HPK Co, Mashhad-Iran
- ✓ Design and develop a test System for Windshield Wiper Motor, IKC company, Sabzevar-Iran
- ✓ Design and develop Barkhausen Noise Test Setup, Sadjad University of Technology, Mashhad-Iran
- ✓ Develop a monitoring System for the Electrical Machines Laboratory, Hakim sabzevari university, Iran

» **Experiences and Skills:** Qt Framework, Labview, Free-RTOS, Arm Cortex-M3, Servo motor, Stepper Motor, Modbus, VHDL, ISE IDE, GPS, GSM.

### » Electronic and Automation Engineer (Talayah Ind- Iran) (part-time) 2010 - 2012

» **Project:** Design and produce a Prototype AMR Water meter with ARM Microcontroller MO+

» **Experiences:** Embedded system Peripherals (SPI, I2C, UART, TIMER, PWM, etc), Arm Cortex-MO+ Architecture, Keil-UVision IDE, Arm7 microcontroller, Analogue Circuit Design, Bluetooth.

LinkedIn Page - <https://www.linkedin.com/in/omid-bazangani/>

### » M.Sc. in Embedded System Security and Safety (Grenoble INP, France) 2019 - 2020

» **Internship:** "Machine Learning for IoT Localization Security" .  
keywords: *Python, Machine learning, UWB, IoT, Artificial Neural Network, Security.*

» **Innovation project:** "Image Sensor Interface for Nanosatellite", based on SOC. The University Space Center of Grenoble (CSUG) keywords: *FPGA, SOC, ZYNQ, VIVADO, VHDL.*

### » B.Sc. in Telecommunication Technology (Sadjad University of Technology, Iran) 2009-2012

» **Thesis title:** "Design and Implement a BCI (Brain Computer Interface) System to Controlling a Robotic-Arm". Keywords: *EEG signal, ARM Cortex-M3, Motor cortex, LabView.*

### » A.S. in Electronic & Electrical Engineering (Hakim Sabzevari University, Iran) 2007-2009

Personal Website - <https://omidbazangani.github.io/>

EXPERIENCE

EDUCATION