SALAR SOHRABI

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OBJECTIVE

Detailed-oriented senior embedded hardware/software engineer with 15+ years of experience in infotainment systems, global positioning, IoT and Automotive. Skilled in MCU/FPGA/DSP, Embedded Linux, BSP and Embedded Android. Technical proficiency in C and Modern C++. Designed, built and tested over 30 embedded projects. Seeking to leverage my knowledge of and expertise in embedded systems to help you maximize productivity and quality of products.

- ✔Automotive, AUTOSAR, ISO26262, ASIL B
- ✔Fluent in Embedded C/C++(20)/Python
- ✔Proficient in MCU/FPGA/DSP, Board Bring-up
- ✔Smart Home, Wireless sensor networks
- ✔Scrum (Jira), GIT, Confluence
- ✔Linux BSP, Driver development, Embedded Android
- ✔PyTorch, TensorFlow, scikit-learn, NumPy
- ✔Hardworking, enthusiast to learn

EXPERIENCE

Capgemini Engineering(*Fundão, Portugal*) - ***Senior Embedded Software Engineer*** Feb 2022 - Dec 2022

- Developed infotainment systems (AOSP), Native Applications, Android Services (C++), Binders, SELinux
- Worked on Embedded Linux systems that includes user-space daemon development using C++, C++ Containers, Std Libraries, Threads, Sockets, IPC Mechanisms, RPCs and Synchronizations
- Worked on automotive projects within **Renault Group**
  - Worked within a cross functional scrum team with the responsibility to Develop and Test Software
  - Developed software components for automotive cars using C/C++, FIDL, AUTOSAR
  - Worked on safety critical systems and software, ISO26262
  - Performed Unit test using C++ based GoogleUnitTest

THS co.(*Tehran, Iran*) - ***Senior Embedded Software/Hardware Engineer*** Jan 2018 - Jan 2021

- Designed and prototyped GNSS receiver, Hand-held GPS receiver in less than a year
- Designed high speed multi-layer PCBs, used Cortex-A53, Embedded Linux, C/C++ and python
- Customized kernel using Yocto, developed Bluetooth/High-speed USB driver/4G WWAN Linux driver
- Led a team of 3 EE/CS engineers, mass production less than a year, built a 500+ channel GNSS OEM

Silix co.(Tehran, Iran) - ***Startup co-founder, Team leader*** Mar 2016 - Dec 2017

- Smart Home (IoT)
  - Designed and built IoT system with Star Topology, containing LoRA, ZigBEE, RF, WLAN, IR interface and Media Player using Quad-core Cortex-A53/A72/A35
  - Linux based, Flask, JS, Web UI, React-native, Reduced boot time to less than 10sec
  - Successfully led the prototype to mass production, Over 10 successful installations for home and garden
- GNSS Tracker (less than 2cm accuracy)
  - Used small-sized GPS receiver like uBlox, used RTK for higher accuracy
  - Used IMU data processing (combination of 3-axis Gyro and Accelerometer) for no signal regions

Medaria co.(Tehran, Iran) - ***Senior Embedded Software/Hardware Designer*** Feb 2014 - Feb 2016

- Led a team in building the hardware/software for CRYO/3D-Fractional medical devices, IEC 60601
- Successfully developed software/hardware for a single board of Cortex-M4 and 600V PWM, fmax=3MHz)

Boreshsazan(Tehran, Iran) - ***Senior Embedded Software/Hardware Engineer*** July 2012 - Feb 2014

- Created the DLP/SLA 3D Printer, build PCB, developed Linux firmware and C# program for system control
- Built a 3-axis CNC controller board; used FPGAs and MCU and LVDS display and bunch of connectivity's
- Successfully obtained sub-0.1x0.1mm accuracy per pixel in 3D-printed part, in less than 14 month
- PCB worked great besides the noisy motors, igniters and motor drivers

Noavaran Moj co.(Tehran, Iran) - ***Senior Embedded Software/Hardware Engineer*** Jun 2008 - Mar 2012

- Designed and built 500W offline power supplies with PFC, Ni/Li/SLA battery chargers/analyzers using EIS

- Built Fully-digital 500W DC Electronic load in CC/CV/CR/CP mode, led a team for mass production
- Obtained over 90% efficiency in isolated offline converters and PF=0.94

SKILLS

Languages	***C, C++(11,14,17), Python 2/3***, C#, Java, Golang, Rust, Assembly JS(node.js, TS, EJS, JQuery), HTML/CSS/PHP, Selenium
Automotive	AUTOSAR, ASPICE, ISO26262, DO-178C, Embedded Android, CANoe, SOME/IP
RTOS	Linux(PREEMPT_RT), FreeRTOS, QNX, uCOS
Linux	***Kernel,Rootfs build (yocto,buildroot), uBoot, Shell scripting***, SELinux ***Boot time optimization***, GUI(GTK/GTK+/Qt/wxWidget)
Android	Embedded Android, Android Studio, Android SDK, React-native
Misc	IPC, Threading, Digital Filters, Speech/Image Processing, OpenCV, OpenCL
Tools	UML, Magic Draw, Design Patterns, Build Tools (Maven, npm), CMake, make
Software	IAR/Keil/GCC, Eclipse, Altium Designer, ISE, Vivado, MATLAB/Simulink, Labview
Version Control	GIT, SVN, Jira, CI/CD — SDLC, V-model, Unit Testing (Mocks, CUnit, Junit, Jest), TDD
Hardware	***Displays:*** TFT/LVDS/HDMI/VGA — ***Sensors:*** IMU, Gesture, Fingerprint, CCD
MCU	STM32MP15x, i.Mx6/8, AM335x, AURIX, 20/80/64, STM32Fx/F7/H7, LPCx/LPC43x
FPGA	ZYNQ(XC7Z0xx), Artix-7, Spartan 3/6, Virtex4/5, Altera Cyclone, TMS320Fx
Power	Power converters/Inverters (Offline converters, DC/DC converter, Inverters, Chargers) MOS/IGBT Motor driver (3phase IM, Brushless, DC Motor)
Protocols	MODBUS RTU/TCP, CAN, CANopen, RS-485, Ethernet, SD/MMC, MQTT 4G/LTE, ESP32, nRF, LoRA, ZigBEE, WLAN, BLE, SDR (HackRF/BladeRF/USRP), PCIe
Languages	***Fluent:*** English — ***Native:*** Persian — ***Basic:*** German, Portuguese

PROJECTS

Gesture recognition for Human Machine Interface. Build a software interface using C++/OpenCV, OpenCL, MATLAB to recognize human gestures for interfacing with industrial machines. Used Stereoscopy and IR camera and achieved standard 10 gesture recognition. Developed on PC, SBC and also a ZYNQ-based hardware.

Smart home controller. Designed and built IoT system with Star Topology, based on Cortex-A53/A72/A35 with interfaces to LoRA, ZigBEE, WLAN, IR. Audio/Video processing using OpenCV and OpenCL. Embedded Linux, A Restful API based on Flask, WebSockets, JS for Web UI, ReactNative for mobile app.

- Reduced boot time to less than 10sec.
- Successfully led the prototype to mass production. Over 50 successful installations on site.
- Led a team of 5 electronics and computer engineers.

Satellite receiver/tracker.

- Designed schematic and PCB and developed firmware for the "Satellite receiver/tracker" in less than a year
- Developed algorithms to control 3-axis servo motors, using ZYNQ, Cortex-H7 and 16bit high speed DACs
- Reached the 0.1-degree accuracy of rotational motion and 0.05 degree/sec speed in each rotational axis, while satellite receiver base is moving

EDUCATION

Master of Electronics Engineering, Sharif University of Technology 2005 - 2008
Relevant Coursework: RFIC, Intergrated Circuits, DigitalPLL.

Bachelor of Electronics Engineering, Iran University of Science and Technology 2001 - 2005

SELECTED TITLES

Ranked 17th in Master's degree national entrance exam among 14k of attendees
Ranked 621st among nearly 200k participants in Nationwide University Entrance Exam (Top 0.5 percent)

EXTRA-CURRICULAR ACTIVITIES

I regularly read *Psychology* to perform better in life and practice *Taichi* and love *Mountain trail*.