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Summary

An embedded software engineer with experience in a variety of positions and industries, and with a hand in other areas including electronics engineering, DSP, test and debug.

Technical skills

Software

* C, C++ and assembly
* Embedded programming within limitations
* Test and debug
* Python, Visual C#
* Developing peripheral drivers
* Driving external data-acquisition parts and measuring technical parameters
* Agile methodology, Scrum
* TDD, unit testing
* Version control software; SmartGit, Gitlab
* Project management software Jira, ProjectPlace, …
* GCC, Common IDE’s, Eclipse, Keil, IAR, …
* Familiar with FPGA
* Developing communication protocols
* Bluetooth programming, SiLab and Nordic

Electronics

* Analogue, digital and mixed systems
* EMC and EMI
* Noise challenges in mixed systems
* Schematic and PCB

Other

* System architecture
* Designing and implementing test jigs
* Safety-critical programming, fault trees, IEC and AS/NZ safety standards

DSP

* DSP, SDR, implementing communication algorithms by DSP’s
* Modulations; AM, FM, FSK, OOK
* Filters, FFT, …
* Converting floating point algorithms to fixed point
* Implementing signal processing algorithms on DSP’s & MCU’s with maximum performance

Soft Skills

**Problem solver:** Actively seeking and resolving technical and operational problems.

**Teamwork:** Extensive experience in team projects at different levels including small team leadership.

**Independent:** Able to work without being supervised; with preference for handle barriers in person.

**Supporter:** Eager to mentor colleagues and help them to debug their works.

**Hands-on Engineer:** Involving closely and directly in all tasks of projects.

**Time management:** committed to do the job in time with prioritising tasks and a fast pace

Attributes

* Action-oriented
* Co-operative
* Detail-oriented
* Tolerant
* Creative
* Calm
* Avid traveller
* Logical thinker

Experience

**Senior embedded software engineer** 2015-now

**Tru-test group, Auckland office**

Responsibilities:

* Embedded software programmer for a state-of-the-art energiser
* Signal processing; real-time pulse processing
* Ensuring compliance with safety standards; IEC,AS/NZ, EN
* Gathering data from field tests, simulating real data in lab
* Design architecture, HW design and SW implementation for independent safety module
* Working on legacy codes, debugging and improving
* Code reviewing
* Investigating development tools, to help selection of platform for future projects

Achievements:

* Configuring Bluetooth Low Energy in advanced modes, e.g. master/slave simultaneously
* Suggested a new mixed SW/HW idea for safety module to reduce TMC and TTM
* Designed new signal processing method that enabled us to perform in-pulse calculations
* Provided ideas to increase software development pace
* Improved the cooperation between HW and SW team by a common understanding
* 3 times titled as “Engineer of the month”

**Embedded designer, system architecture** 2005-2015

**Pardazesh Basamad Ltd.**

An agile, small size, high-tech Company performing high-level R&D projects

Responsibilities:

* HW and SW designing for DSP systems, SDR platforms
* Simulating
* Programming embedded systems with C
* Choosing and setting up platforms; ARM, PIC and AVR microcontrollers, Piccolo and floating point DSP’s
* Designing and implementing serial protocols for wireless projects
* Technical negotiating with the costumer, providing solution and choosing platform
* Proof-of-Principle, Form Study and/or functional prototyping
* Working on legacy codes, debugging and improving
* Implementing battery management functions in hand-held products

Achievements:

* Designed and implemented a high-tech AD-HOC FH-SS handheld wireless radio, using TI DSP’s and Analog Devices ISM-band transceiver modules
* Designed and implemented a secure FH-SS video down-link for UAV’s
* Introduced a new idea of combining MAC and PHY layers in a frequency-hopping Ad-Hoc radio with a state-of-the-art robust routing algorithm
* Eye-catching records of budget and delivery time for 4 embedded control projects

**Digital electronics engineer, Driver/Firmware developer** 2002-2005

**Basamad Negar Ltd.**

Developer of laboratory and broadcast products

Responsibilities:

* Digital hardware designing; schematic and PCB
* Developing peripheral drivers for DSP and microcontroller in C and assembly
* Designing signal processing algorithms
* Designing and testing analogue interfaces and high precision circuits
* Proof-of-Principle, Form Study and/or functional prototyping
* Planning and teaching costumers training courses

Education

**M.Sc. in Digital Electronics Engineering**

**Sharif University of Technology**

Thesis: Debugging method for parallel-processing DSP systems

Implemented on a platform consisting 4 floating-point digital-signal-processors

**B.Sc. in Electronics Engineering**

**Sharif University of Technology**

Final project: Implementing a narrowband FSK transceiver

Controlled and used by a MCS-51 microcontroller

Computer Skills

Altium/ Protel 99SE debug tools, GDB, RTT

TI code composer, Visual DSP Jira, Gitlab, Git, version control systems

Code Vision, Keil uvision, Eclipse, AVR studio Simplicity Studio, SEGGER embedded IDE

Awards

3 silver medals from physics, mathematics and computer students Olympiads, 1993

2nd place in university scientific competitions among 150 students, 1998

8th place in national electrical/electronic engineering Olympiad, 2000

Outside interests

Chess (Fide Rating: 1624, Howick club team member) Team sports, volleyball

Physics Classical music

Psychology Travelling