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Summary

Embedded software/electronics engineer with 15 years’ experience in a variety of positions and fields, including embedded hardware/software implementation, RF engineering, system architecture, DSP engineering, test and debug with a great track record of accomplishing projects within limited budget and time.

Technical skills

* Microcontroller hardware and software
* Analogue, digital and RF systems
* system architecture
* Signal processing
* Developing communication protocols
* Embedded programming within limitations
* Test and debug
* C, C++ and assembly
* Python, Visual C# and Visual C++
* Developing peripheral drivers, ADC, DMA, I2C, UART, SPI, etc.
* Driving external data-acquisition parts, measuring technical parameters, ENOB, THD
* Agile methodology, Scrum TDD, unit testing
* Version control software; SmartGit, Gitlab
* Safety-critical programming, fault trees, IEC and AS/NZ safety standards
* Designing and implementing test jigs
* Ability to translate user requirements into technical solutions
* Predict future problems and providing best solutions during design stage

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 Engineering:** Involving closely and directly in all tasks of projects.

Attributes

* Action-oriented
* Co-operative
* Decisive
* Detail-oriented
* Can-do attitude
* Creative
* Calm
* Avid traveller
* Seeking out new responsibilities
* Logical thinker

Experience

**R&D engineer** 2015-now

**Tru-test group, Auckland office**

Responsibilities:

* Embedded software programmer for a state-of-the-art energizer (C++)
* 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 prototyping and SW implementation for independent safety module as a team member
* Working on legacy codes, debugging and improving
* Code reviewing

Achievements:

* 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

**Embedded/DSP engineer, system architecture/project lead** 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 and SDR platforms
* 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
* Designing, implementing and testing to meet military environment requirements
* Supervising junior engineers, helping other teams to overcome their barriers
* Programming microcontrollers for industrial control applications (with C)
* Programming DSP’s for SDR/signal processing projects (with C in TI Code Composer)

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
* Proposed and developed an innovative wide-band spread-spectrum wireless link for remote-controlling a UAV, robust against interference, interception and jamming
* Designed and implemented a secure FH-SS video down-link for UAV’s
* Reverse-engineering for an old under-water communication system, in order to improve it for new requirements
* Proposed an under-ground communication system based on seismic signal processing
* 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
* Developed an embedded system to control chemical and pharmaceutical manufacturing systems with complicated processes, including GUI implemented with visual C# 2010
* Suggesting a new communication system in a parking management/guidance system, led to wiring costs being halved; using WSN, Ad-Hoc and wireless technologies
* Reverse-engineering and re-designing the processing section of an IFF RADAR with newer technology

**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
* Implementing simple GUI’s with visual C++ 6.0
* Proof-of-Principle, Form Study and/or functional prototyping
* Planning and teaching costumers training courses

Achievements:

* Cut the hardware cost of future projects by 80% suggesting and developing a general purpose SDR platform
* Successfully implemented telephony algorithms on DSP; FSK, ADPCM, CALLER-ID, etc.

**Signal processing group member** 2000-2002

**Professor Hesabi organization (NGO)**

A scientific and research non-governmental organization

Responsibilities:

* PCB design, montage, primary tests
* Developing DSP drivers with assembly
* System test and evaluating

Achievement:

* As a team member, managed to develop a portable battery-powered DSP-based ANC (Active noise controller)

Education

**M.Sc. in Digital Electronics Engineering 2000**

**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 1998**

**Sharif University of Technology**

Final project: Implementing a narrowband FSK transceiver

Controlled and used by a MCS-51 microcontroller

Computer Skills

Code Vision, Keil uvision, Eclipse, AVR studio Jira, Gitlab, Git, version control systems

TI code composer, Visual DSP Microsoft Visual Studio

Altium/ Protel 99SE AWR (RF simulation)

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

Referees

Available on request\*