**Reza Amani** Pakuranga heights, Auckland 2010

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Summary

Electronics/software engineer with 16 years’ experience in a variety of positions and fields, including embedded hardware/software implementation, RF engineering, system architecture, DSP, test and debug with a great track record of accomplishing projects within limited budget and time and with a special passion in physics and space.

Technical skills

* Microcontroller hardware and software
* Analogue, digital and mixed systems
* system architecture
* RF design; RFIC’s, amplifiers, filters, synthesizers, etc.
* Designing High power RF amplifiers
* Simulating RF blocks by AWR
* Electronic measurements; Spectrum-analyzer, network analyzer
* Super-heterodyne, Single chip transceiver architecture, IQ modulator/demodulator
* Analog Devices solutions for sub-GHz short-range wireless communication
* Modulations; AM, FM, FSK, OOK
* DSP, SDR, implementing communication algorithms by DSP’s
* Signal processing
* C, C++ and assembly
* Embedded programming within limitations
* Test and debug
* Python
* Visual C# and C++
* Driving external data-acquisition parts and measuring technical parameters
* Agile methodology, Scrum
* TDD, unit testing
* Version control software; SmartGit, Gitlab
* Analog circuits; design and debug
* EMC and EMI
* PCB layout considerations for reducing interference and noise
* Power supplies, filters, signal shaping
* Noise challenges in mixed systems
* Schematic and PCB
* Developing communication protocols
* Analogue circuits simulation with LTSpice
* Designing and implementing test jigs
* Ability to translate user requirements into technical solutions
* Predict future problems and providing best solutions during design stage
* Serial communication standards like RS485, RS232 and ZigBee
* Tackling wireless communication challenges
* Safety-critical programming, fault trees, IEC and AS/NZ safety standards

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
* Open-minded
* Detail-oriented
* Tolerant
* Can-do attitude
* Creative
* Calm
* Avid traveller
* Seeking out new responsibilities
* Logical thinker

Experience

**R&D engineer, Project SW team supervisor**  2015-now

**Tru-test group**

Responsibilities:

* Embedded software programmer
* 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
* Liaising with HW group on debugging SW/HW and system-level discussions
* Working on legacy codes, debugging and improving
* Code reviewing
* Technical supervising a small team of embedded SW engineers

Achievements:

* Suggested a new mixed SW/HW idea for safety module to reduce TMC and TTM
* Designed new signal processing scheme 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 sprint” among near 20 engineers in 8 months

**Embedded designer, system architecture, RF designer, Analogue designer** 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
* Designing RF modules using MMIC’s
* Simulating
* Designing mixed systems (HW&SW); schematic and PCB
* Programming embedded systems with C
* Performing some mechanical calculations and interfacing electronic concepts with mechanical requirements
* Choosing and setting up platforms; ARM, PIC and AVR microcontrollers, Piccolo and floating point DSP’s
* Designing and implementing serial protocols for wireless projects
* Proof-of-Principle, Form Study and/or functional prototyping
* Designing, implementing and testing to meet military environment requirements
* Working on legacy codes, debugging and improving
* Professional testing and evaluating radio systems
* Designing RF modules using MMIC’s
* Utilising TI DSP’s and DSC’s for controlling high-power RF amplifiers and implementing telecommunication algorithms in handheld wireless transceivers

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 wide-band spread-spectrum radio link for safe and secure control of UAV’s
* 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
* Proposed and developed an innovative FH wireless link for remote-controlling a UAV, robust against interference, interception and jamming
* Successfully managed to develop a military product following some of “Mil-std-810A” and “Mil-std-810G part two” rules and methods
* Developed an automatic system to test digital cards of up to 80 I/O’s
* Integrated power supplies of an aircraft, re-designed protection modules and halved occupied space
* Built a Hall-effect current sensor with full range of 50A for testing our products in steady-state and evaluating them in transients

**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
* 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

Achievements:

* Reached the record of 100MS/s sampling rate and 13.5 ENOB with an acquisition board
* Cut the hardware cost of future projects by 80% suggesting and developing a general purpose SDR platform

**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

Altium/ Protel 99SE AWR (RF simulation)

TI code composer, Visual DSP Microsoft visual C++/C#

Xilinx ISE Analog Devices simulation programs

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

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\*