

Tomasz Starzyk –

Embedded Software Engineer

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Embedded Software Engineer \ Firmware Engineer with commercial experience in software and hardware design, development and testing in critical safety industries like: Automotive, Railway and Medical for whole project lifecycle. Now started contracting career.

WORKING EXPERIENCE

- 11.2018 – PS Embedded Ltd - independent contractor
Services:
- Software and Firmware design and implementation
 - Embedded Software Testing
 - System Architecture Design
 - Misra C compliance
 - Software Documentation
 - Hardware troubleshooting
- 11.2017 – 11.2018 Embedded Software Engineer, (General Electric Medical) GE-Healthcare, Sandiacre, ENGLAND.
Accomplishments:
- Medical project (IEC 62304), Standalone Wireless Pod Charger:
 - ✓ Bare metal software coded in C (Keil uVision) for STM32L0
 - ✓ Bluetooth low energy communication (Bluetooth 2.1)
 - ✓ Hardware and Software integration
 - Bootloader for Standalone Pod Charger
 - Bluetooth upgrader for Standalone Pod charger
 - V model documentation:
 - ✓ Software development plan, architecture and detailed design, verification plan, test plan, FMEA for software and hardware
 - Code review
 - Software improvement and maintenance
 - Static analysis – Misra C
 - Reliability and pre-compliance tests (IEC60601)
 - Hardware improvement and testing
 - Schematic design
- 06.2015 – 10.2017 Embedded software engineer (contract), RCC NOVA SP Z.O.O., Krakow, POLAND
Accomplishments:
- SIL2 (safety integrity level) project, railway folding step controller:
 - ✓ Bare metal software coded in C (Atollic True Studio, IAR workbench) for STM32F1xx
 - ✓ Hardware and software integration
 - ✓ First running and integration in train
 - ✓ EMC testing immunity/emission, burst/surge, ESD. (EN 61000–(1-8))
 - Automotive and Railway pantograph driver with ADD (automatic drop device) system:
 - ✓ Bare metal software coded in C (Atollic True Studio) for STM32F1xx
 - ✓ Hardware and software integration
 - MCU power on self tests coded in C (IEC 60335)
 - DC, BLDC, servo motor controller coded in C
 - PID regulator coded in C
 - GPS parser library and distance calculator coded in C (Atmel Studio) for AVR ATmega128a using FreeRTOS system
 - Bluetooth low energy (RFduino) transmitting cyclist cadence and power.

	<ul style="list-style-type: none"> ▪ Static analysis IAR workbench – Misra C. ▪ Liaising with customers ▪ Device bring up ▪ Documentation writing ▪ EFT/Burst Generator usage ▪ Seeking savings in BOM ▪ Prototypes boards soldering
06.2015 – 08.2015	ACK Cyfronet AGH, Krakow, POLAND, Internship Accomplishments: <ul style="list-style-type: none"> ▪ Random Projection Algorithm coded in CUDA C
05.2015 – 06.2015	Silvair, Krakow, POLAND, Internship Accomplishments: <ul style="list-style-type: none"> ▪ Review user manuals ▪ Product configuration testing

EDUCATION

01.2016 – 09.2017	Master's studies at AGH University of Science and Technology, specialisation: Embedded Systems. Master Thesis - <i>"Data encryption in the low-energy microprocessor systems."</i>
09.2012 – 01.2016	Engineering studies at AGH University of Science and Technology, specialisation: Electronics and Telecommunications. Bachelor Thesis - <i>"Hardware implementation of text data dimensionality reduction and text similarity metrics in GPGPU."</i>
09.2009 – 06.2012	1st Secondary School Name of Nicolaus Copernicus in Jaroslaw, class with extended maths and computer science.

SHORT COURSES

09.2012	High voltage electrical machine handling, Krakow, Poland
03.2016 – 09.2016	SIL (safety integrity level) projects working, TÜV, Krakow, Poland
12.2017 – 09.2018	Medical product development quality trainings, England
12.2017 – 09.2018	Software development and project lifecycle trainings (SDLC) , England
01.2018	V Model training, England

STUDENTS PROJECTS

- XTEA, AES cipher algorithm coded in C (Keil, Simplicity Studio) for ARM M0+ and EFM32 Giant Gecko (ARM M3).
- Random Projection algorithm for text data dimensionality reduction and similarity metrics implemented on CPU and acceleration on GPU with CUDA architecture, coded in C and C++.
- Tracking simple object using OV7670 camera on servo mechanism coded in C and VHDL (Vivado 2015.2).
- Meteorology Station: design of a PCB board in Eagle and software coded in C (Atmel Studio) for AVR ATmega32, (LM35, HCZ-D5, 2x24 HD44780).
- Breathalyser: design of a PCB board in Altium Designer and software coded in C (Atmel Studio) for AVR ATmega88. (TGS8100).
- UART translator to CAN, and CAN to UART – coded in C (e2 Studio) for Renesas RX63N.
- Distance measurement system using sonar sensor (HC-SR04), coded in C (Keil) for ARM M0+ and user interface coded in LabView.
- DMX512 communication protocol coded in C (Keil) for ARM M0+.
- Black Jack card game simulator coded in C (Keil) for ARM M0+ .
- Metronome coded in C (Atmel Studio) for AVR ATmega32.
- Spirit level and directions indicator android application coded in Java (Android Studio).
- ADC converter – design of a schematic and pcb layout in Eagle, (LTC2258-12).

SKILLS

- Programming language:
 - ✓ C (very well)
 - ✓ C++ (well)
 - ✓ C# (basic)
 - ✓ Assembly (basic)
 - ✓ Labview, Multisim, Matlab/Simulink (basic)

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- ✓ VHDL (basic)
 - Hardware designing :
 - ✓ Eagle, Altium Designer (basic)
 - ✓ LT Spice (well)
 - Architecture:
 - ✓ ARM M0+
 - ✓ STM32: cortex M-3, cortex M-4, cortex M-0
 - ✓ EFM32: cortex M-3
 - ✓ AVR: ATmega32, ATmega128, ATmega88
 - ✓ GPU (Nvidia), CUDA
 - ✓ NRF518xx architecture (RFduino) (basic)
 - ✓ FPGA (Xilinx Spartan3, Xilinx Spartan6, Zynq 7000) (basic)
 - Operating systems:
 - ✓ Windows
 - ✓ Linux/Unix (basic)
 - Regulatory and quality development standard: IEC60730, PN-EN50128, PN-EN50129, IEC62304, ISO13485
 - Misra C : 2012, 2004, ESCR : 2013
 - FreeRTOS, CMSIS RTOS - RTX
 - Bluetooth 2.1 + EDR, low energy
 - SPI, I2C, I2S, RS232, RS485, CAN, USART, UART, DMA
 - Keil uVision, Atollic True Studio IDE, IAR Workbench IDE, Atmel Studio IDE, Simplicity Studio IDE, MS Visual Studio IDE
 - UML, doxygen documentation
 - GIT, GitSwarm, GitLab
 - Software version control (SVN)
 - Jirra, Agile, V-Model
 - Device bring up – troubleshooting using logic analyzers, oscilloscopes and stimulus generators
 - THT and SMD soldering
 - Electronic circuit reading
 - Driving licence

FOREIGN LANGUAGES

- Polish - native
- English - communicative, intermediate
- German - basic

References on request.