Vladimir Sirghi

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EXPERIENCE

STMicroelectronics   Le Bourget-du-lac, Auvergne-Rhône-Alpes, France
Embedded software engineer   *March 2022 – Present*
- Develop firmware for ARM Cortex-M targets and FPGAs SOC prototypes.
- Lead and report on verification activities, ensuring thorough testing and validation.
- Operate in an agile environment: address stories, tasks, tickets, sprints, issuing pull requests.
- Provide support and guidance to external consultants throughout project execution.
- Closely collaborate with digital design, architecture and test teams.
- Document firmware design documentation.
- Coding in C in automotive safety oriented projects.
- Write cmake scripts for C/C++ project system build.
- Use gcc and gdb for compilation and debugging.
- Use and update low level drivers LL and HAL: hardware abstraction layers.
- Bare metal coding.
- Debug and optimize software in a cross-team environment.
- Use git for versioning in a multiple nested repositories project environment.
- Address, review pull-requests on github.
- Develop in Windows, Linux, WSL, vscode windows to linux environments.
- Write python and bash scripts to automate tasks and improve efficiency.
- Make unit and integration tests.
- Use Jenkins automated tasks, collaborate with the dev-ops to put in place new jobs.
- Implemented mechanism allowing the user to extract reports on demand involving the ROS tool.
- Developed firmware for power consumption profiling.

Atos   Grenoble, Auvergne-Rhône-Alpes, France
Test engineer: cmos image sensors   *October 2020– February 2022*
- Developed Python testing scripts ensuring that the following safety mechanisms met safety requirements for the automotive industry:
  - mcu watchdog, stack monitoring, lockstep
  - firmware global variables protection,
  - at startup built in self tests bist
  - memory integrity, parity, bist,
  - crc program protection,
  - clock bist,
  - pll unlock detection,
  - asil diagnostic rows and columns,
  - otp memory crc,
  - supply monitoring blocks,
  - periodic voltage monitoring,
  - thermal monitoring,
  - periodic crack detection.
- Documented tests specifications and reported on test results.
- Used git for code versioning, Jenkins for automation and integration
- Wroked in agile environment.

STMicroelectronics   Grenoble, Auvergne-Rhône-Alpes, France

Test engineer   *September 2018 − August 2020*
- Developed Python scripts for unitary, integration, and system tests on hardware and firmware components.
- Documented tests requierements and reported on test results.
- Used git for code versionning.
- Solved and addressed tickets and issues on both hw and fw components.

French Army   Laudun - l'Ardoise, Occitanie, France

Electro-mechanical technician and team lead   *September 2010 − August 2018*
- Managed military electrical networks, ensuring power supply and operational readiness.
- Performed maintenance and troubleshooting on power plants and generator sets.
- Designed and installed military electrical networks in external operations.
- Led a team of military technicians, providing guidance, training, and support to ensure quality work and team cohesion.

EDUCATION

Savoie Mont Blanc University   Le Bourget-du-Lac, Auvergne-Rhône-Alpes, France

Masters in "Electronic of Embedded Systems and Telecommunications"   *September 2018 − August 2020*
- Telecommunications electronics
- Fast signal electronics and EMC
- Microwave circuits
- Signal processing
- DSP signal processing processors
- C programming for embedded systems
- Radiocoms & Wireless LAN
- FPGAs and reconfigurable processors
- IP networks and Internet of Things
- Programmable systems-on-chips
- High speed transmission
- Error detection and correction
- Computer architecture
- Principles of radiocomunication
- Antennas
- Communication bus systems and networks
- Integrated radio frequency components
- Linux kernels for embedded systems
- Real time on microprocessor target
- Digital circuit technology and design
- Applications of embedded systems in telecoms
- Advanced Integrated Components
- Energy production and management for systems

Toulouse 3 University "Paul Sabatier"   Toulouse, Occitanie, France

Bachelor in "Electronics, Electrical Engineering and Automation."   *September 2016 − August 2018*
- Operating systems for control computers.
- Computer process linking.
- ADC/DAC converters.
- C language: pointers and sequential files.
- Interpolation, adjustment, and optimization.
- Laplace, Fourier, Z-transform, and sampling.
- MATLAB language and matrix calculations.
- Propagation of a signal in free and guided space.
- Transfer functions.
- Quadrupoles.
- Resolution of linear and non-linear systems.
- Linear programming.
- Analog diode circuits, static and switching transistors.
- Amplifiers, field-effect transistors, and counter-reaction.

- Insulating materials, magnetic circuits, three-phase distribution networks, and single-phase transformers.
- Synchronous machines: alternators and motors; asynchronous motors.
- DC/DC converters, switching power supplies, and single-phase inverters; speed variation of a direct current machine.
- Temporal and frequency modeling of elementary dynamic systems (mechanical, electro-mechanical, etc.).
- Performance analysis of a controlled system and summary of an analog control strategy.

CNED "Centre National d'Enseignement à Distance"   Avignon, Provence-Alpes-Côte d'Azur, France
BTEC HND in "Electrical Engineering and Electronics "   *September 2014 – August 2016*

- Mathematics
- Applied Sciences
- Construction
- Electrical Engineering
- English
- General Culture and Expression

LANGUAGES

English: Professional
French: Native
Romanian: Native

SKILLS & INTERESTS

Languages: C, python, bash, MATLAB

Technologies & tools: Ubuntu/Linux, Git, CMake, LaTeX, ROS, OpenOcd, Cortex M, Jenkins, gcc/gdb, jlink/stlink

Protocols: i2c, spi, uart, jtag, swd, can

Continued Education:
- Mastering RTOS: Hands on FreeRTOS and STM32Fx with Debugging
- Bash Mastery: The Complete Guide to Bash Shell Scripting
- Embedded Systems Programming on ARM Cortex-M3 M4 Processor
- Mastering Microcontroller: Timers, PWM, CAN, Low Power (MCU2)
- Embedded Linux Step by Step Using Beaglebone Black
- The Complete Python Bootcamp From Zero to Hero in Python
- Git Complete: The definitive, step-by-step guide to Git
- Mastering Microcontroller and Embedded Driver Development
- STM32Fx Microcontroller Custom Bootloader Development
- Microcontroller Embedded C Programming: Absolute Beginners

Interests: family activities & education, music, cross-training

PROJECTS

Moving Cube Image
- C application running on a stm32fx target reading X, Y, Z values from the joystick's accelerometer
- Based on X, Y, Z values dynamically display the position of the cube on the screen

Convolutional encoding machine & viterbi decoder
- Python application running convolutional encoder on data
- GUI (developed in QT) allowing the user to enter textual message in data field & explicetly corrupt some bits
- transmitting corrupted payload to the stm32fx via uart
- stm32fx running a viterbi decoder and printing the fixed message on a lcd

PID PWM motor control
- C code embedded into stm32fx ram memory running application
- application reading temperature from a temperature sensor
- based on temperature value outputing a PWM signal
- increasing the PWM duty cycle with the temperature increase
- a cooler motor controlled through PWM energy

Maximum Power Point Tracking MPPT Solar Panel Controller
- C application running on PIC16F877A microcontroller
- reading voltage and current from the solar panel

- calculating the maximum power point using the Perturb & Observe algorithm
- adjusting the duty cycle of a DC-DC converter to optimize power output
- implementing a sun tracking system to follow the sun's position for maximum illumination
- charging a battery & powering a water pump