

JONATHAN RICO

EMBEDDED ELECTRONICS & SOFTWARE ENGINEER

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SKILLS



Embedded system design

- Architecture
- Component selection
- Low power design



Embedded programming

- Embedded C, CMake
- Python
- ARM Cortex family, AVR, MSP430.
- uC: STM32, nRF52/53
- Zephyr RTOS



Debugging

- Electrical fault finding
- SoC / peripheral issues
- Low-level driver issues
- Realtime / race conditions
- Profiling



PCB design & prototyping

- Schematic and layout
- SMD stencil soldering
- Fine-pitch SMD rework
- Enclosure design

TOOLS



Software

- Linux, Docker
- CI: Git, Gerrit, Github, Bitbucket, Jenkins, Bamboo
- Emacs/vi, ST, Keil, Eclipse, Quartus.
- Debuggers: GDB, Segger Ozone



Lab equipment

- Multimeter / lab PSU
- Logic analyzer
- Oscilloscope, waveform gen
- Spectrum analyzer, BLE sniffer

EXPERIENCE

R&D Engineer at Eco-Stor - Oslo - Norway (2024 - present)

Tasks

- Develop firmware to control electric vehicle batteries
- Design system-wide communication protocol

Achievements

- Implemented battery safety module
- Designed modular EV battery simulator (CAN bus)
- Improved software development process & planning

Embedded Software Engineer at Nordic Semiconductor - Oslo - Norway (2020 - 2024)

Tasks

- Maintain the Zephyr RTOS Bluetooth host (Open-source on GH, @jori-nordic)
- Write unit and system tests in C and python
- Work closely with key customer to integrate their wireless solution in nRF Connect SDK

Achievements

- Designed multi-device radio tests using a mix of simulation and on-device frameworks
- Improved internal tooling and documentation
- Debugged race conditions and synchronisation bugs

R&D Engineer at Expleo - Toulouse - France (2019 - 6mo)

Achievements

- Brought an universal part picker robot from paper sketch concept to working prototype, with a severely limited parts and time budget. Includes electronics, pneumatics, firmware and machine vision pipeline.

R&D Engineer at Maple High Tech - Toulouse - France (2017 - 2019)

Tasks

- Design an industrial I/O signal isolation and conditioning eurorack card (analog tech only)
- Redesign a Ultra Wideband geolocation beacon for low power and small size
- Port the UWB stack / baseband from STM32 to nRF52

Achievements

- Developed a flexible driver abstraction for use in the baseband, implemented for STM32 and nRF52 platforms.
- Selected components based on reliability, sourcing and longterm availability
- Simulated individual analog blocks (LTSpice), validated with real hardware (stress tests, limits, etc)
- Wrote extensive documentation (Design report, Test specification & report, etc..)

EDUCATION

Master - Electronics for Embedded Systems and Telecoms (2015 - 2017)

Major in digital systems - Université Paul Sabatier - Toulouse III

Associate's degree (BTS) - Electronic Systems (2013 - 2014)

Lycée Déodat de Séverac - Toulouse

PROJECTS

- Assembler for the SpinSemi FV-1 audio DSP written in Common Lisp.
 - Binary RGB LED wristwatch, featuring: Gesture controls, multiplexed scrolling text display, Bluetooth LE features. nRF52-based, uses serial LEDs. Evolution of earlier MSP430-based watch.
 - Guitar FM transmitter: matchbox-sized unit that plugs directly into an electric guitar. Amplifies, compresses and transmits the resulting audio over standard FM radio frequencies. AVR-based.
- More on my website (see header).**