Matteo Bonora

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EXPERIENCE

Nov 2021 – Present

Firmware Developer
Squadra Corse Driverless PoliTO
- Development of firmware for the dashboard of the autonomous vehicle.

Sep 2019 – Dec 2021

Software Chief Technician
E-Agle Trento Racing Team
Management of E-Agle's software division (team of ~15 people) in the following areas:
- Microcontroller programming: development of firmware for various custom control boards based on STM32 microcontrollers (ECU, BMS, Sensors, etc...)
- Pilot user interface: QT-based user interface for the pilot embedded in the steering wheel; Raspberry Pi setup with a custom I/O circuit board for external buttons and CAN communication
- Telemetry: data acquisition and transmission. Backend in C, JavaScript and MongoDB, communication with MQTT and WebSockets, frontend in JavaScript for live data display

Nov 2018 – Sep 2019

Project Manager for high-voltage battery management system
E-Agle Trento Racing Team
- Battery management system firmware development for high-voltage power battery pack

2017 – 2021

Sailing Instructor (seasonal work)
N-Sail Lake Garda
- Rigging and unrigging of dinghy sailboats
- Teaching sailing
- Inflatable boat driving

EDUCATION

2022 – Present

Master's degree in Computer Engineering
Specialization in Embedded Systems Department of Control and Computer Engineering, Polytechnic of Turin

2016 – 2021

Bachelor's degree in Computer Science
Department of Information Engineering and Computer Science, University of Trento
- Thesis on Battery Management System Development: Issues and applications in a Formula SAE electric race car

2011 – 2016

High School Diploma in Information Technologies
Istituto Tecnico Tecnologico G. Marconi, Rovereto (Italy)

SKILLS

Languages

Italian – Mother tongue
English – Good
- Cambridge B2 certification pass with Grade A (180 pts.)

Programming	• Proficient in many languages: C, C++, Python, JavaScript, Unix Shell, C# • Good with Git and services built on it (GitHub, GitLab) • Experienced with unit testing • Good skills with programming patterns (object oriented, imperative)
Embedded systems	• Good understanding of product data-sheets and schematics • Component driver development for microcontrollers (External ADC, I2C, SPI, etc) • STM32 programming using ST HAL libraries • NXP S12 automotive microcontroller experience • Experience in software debugging and hardware troubleshooting • Raspberry Pi development: SocketCAN and GPIO • Linux-based operating systems • Good Arduino programming skills
System administration	• Linux systems knowledge: installation and configuration of distributions from network setup to package management • Experience with system administration (user management, kernel module loading/unloading/configuration, mountpoints/fstab • Filesystems: setup and maintenance of EXT4, Btrfs, F2FS filesystems. Basic knowledge of LVM • Containers: Good understanding of Docker and docker-compose • Virtual Machines: Proficient in VirtualBox, basic libvirt/QEMU skills • Basic knowledge in Linux networking tools (ip, iptables, ping, traceroute, iperf, netcat, etc…)
Design and manufacturing	• Intermediate 3D CAD design skills for FDM 3D printing • Proficient in Cura Slicer • Consumer-grade and professional FDM 3D printer experience • Good soldering skills
Sailing	• Competitive dinghy sailing since 2005 • Federal Sailing Instructor - First Level (2017)

ADDITIONAL INFORMATION

Driving licence	European B driving licence