PASQUALE **CAMPANILE**

Naples, Italy · (+39) 3277831318

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I am a **Mechatronic engineer** with a strong background in designing and developing electronic boards and wiring systems for innovative prototypes.
Expert in the full **hardware** development lifecycle: from **component selection** (BOM management, sensors, actuators, MCUs) to **multi-layer PCB design (4-6 layers)** and **wiring harness design** for high-stress environments.
I am passionate about finding creative solutions to technical challenges and always on the lookout for opportunities to improve and innovate, my technical expertise and passion for electronics and motorsport have allowed me to make significant contributions to projects where I work on.

WORK EXPERIENCE

FROM 2022 - PRESENT

HARDWARE ENGINEER NEABOTICS / PRISMA LAB (NAPLES, ITALY)

PrismaLab and Neabotics, a leading organizations in the field of engineering research, automation, aerial robotics and Non Destructive Test.
(Ealge, Fusion360, CAD/CAM, STM32, MBED Studio, CubeIde, Digilent discovery, Battery pack, BMS)

- **Design and Development of PCBs for NDT Concrete Testing:**
  Responsibilities included schematic design, component selection, circuit routing, connection verification, and custom made BMS for LiPo and LiFePo4. These electronic boards were equipped with integrated STM32 microcontrollers and specific transductor that allowed for precise measurement of the time-of-flight of acoustic waves in concrete.
- **Electronic design of a Narrow-Space Crawler - Patent Inventor**
  Electronic design (PCB, harness), prototyping, and testing. The crawler's unique features included very compact size, advanced mobility, and adaptability to various and hostile environments. I used TOF sensor (VL53L4), STM32 microcontroller (L432KC) and other IC for CAN-BUS comunication, Power supply, Hub USB 2.0, USB2CAN interface, motor driver.
- **Participation in European Project - Aerial Core**
  I played a role in designing and implementing the electronics required for the operation of a robotic arm connected to a large-scale drone for high voltage operation. In specific electronic control system design, sensor integration, programming, and fine-tuning communication interfaces between the robotic arm and the drone

FROM 2020 - 2022

EMBEDDED SYSTEM ENGINEER / TEST DRIVER UNINA CORSE, FORMULA SAE TEAM

Design and construction of a racing car for the european championship (Germany, Italy, Spain)
(CANBUS, Power electronic, Altium, Harness, Battery pack, LiFePo4, Rapid Harness)

- **PCB design and implementation for a self-driving racing car with Fusion360/Eagle:** Responsibilities included schematic design, component selection, circuit routing of high power circuit for the electric motor and signal integration for the communication.
- **TeoRace Award Winner:** Awarded for the best electronic development process and the most innovative architecture at Formula Student Italy 2023.
- **Sistemi Driverless (Guida Autonoma):** Wiring Harness: Full design and manufacturing of the vehicle's wiring (Power & Signal), adhering to automotive standards for high vibration and temperature resistance. Hardware Integration: Selection and integration of LiDAR, OnBoard computer (NVIDIA JETSON) and steering actuators over CAN bus. CAN Bus configuration: Configuration of CAN nodes and troubleshooting of latency and signal integrity issues (Split termination, ground loop mitigation). Test Driver: Official test driver for vehicle dynamics optimization and control system validation.

FROM MARCH 2022 – SEPTEMBER 2022

SYSTEM INTEGRATOR / STAGE 3EM (NAPLES, ITALY)

- **SCADA/HMI Development:** Implementation of monitoring interfaces for HVAC systems on cruise ships (EXPLORA I) using CitectSCADA.
- **Industrial Communication:** Configuration of Modbus TCP/IP networks for interfacing PLCs with supervision stations.

EDUCATION

MASTER'S DEGREE IN ELECTRONIC ENGINEERING

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II | IN PROGRESS

BACHELOR'S DEGREE IN MECHATRONIC ENGINEERING

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II | JULY 2022

- Final Grade: 110/110 Cum Laude. Thesis on HVAC monitoring systems

TECNICAL SKILL

- Eagle, Altium, Fusion360, Solidworks
- Mbed Studio, C/C++, VSCode, Python
- PLECS, Driver, LTSpice
- Field Bus (I2C, SPI, USB, CAN, UART)
- PLC, SCADA/HMI
- Ansys, Rapid Harness

INTEREST

- FPV Drones
- Football
- Surf
- Gymnastic
- Aircraft RC modelling
- Karting