TOMMASO CANOVA

Master student in Artificial Intelligence

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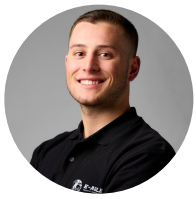

EXPERIENCE

Team Leader and Embedded Software Engineer

E-Agle Trento Racing Team (Formula Student)

Oct 2021 – Sept 2023 Trento, Italy

- **Lead** and organized a group of 80 students among engineers and economists towards the building of a fully electric car, in order to take part in the **Formula Student European** competitions (*Team website*).
- Developed the **BMS** (Battery Management System) **firmware** of the custom board connected to the low voltage battery of **Fenice** and **Fenice-EVO**, the two latest electric vehicles of the team. The system supplies all the other **low voltage** boards, controls the car's cooling system and manages all the safety controls required (*Repository*).
- Participated to Formula Student Germany and Formula Student Italy competitions.
- **Skills:** Low level programming with C, CAN bus protocol, STM32 MCUs, Hardware debugging, Soldering, KiCAD, Teamwork, Leadership, People management, Relationship management with partner companies

R&D Intern

ProM Facility (Trentino Sviluppo)

Sept 2021 – June 2022 Rovereto (TN), Italy

- Developed the firmware and the Graphical User Interface (**GUI**) for an innovative stepper motor test bench prototype, running on **ARM** (STM32) architecture. **Reduced testing setup time by 94%.** (*Repository*)
- Built a part of the firmware for a calibration system of a medical machine used by a proton therapy company
- **Skills:** C, STM32 MCUs, Python, Multi-threading, Data manipulation, Data Visualization

PROJECTS

HiFi Watermark Audio

[Deep Learning] - Aalto University

September 2023 – December 2023

- U-Net based **deep learning** architecture for Watermark embedding and retrieval on HiFi-GAN generated audio. *Repository*
- Pytorch model trained using **LJSpeech** dataset. Achieved Perceptual Evaluation of Speech Quality (**PESQ**) score of **4.4/5**

Fibit Finess Tracker data analysis

[Data Science] - Aalto University

December 2023

- Performed Data Cleaning, **Feature Engineering** and Exploratory Data Analysis. Repository
- Extracted **insights** and **trends**. Validated users compliance with WHO guidelines on physical activity and sedentary behaviour.

EDUCATION

M.Sc. in Artificial Intelligence

Second year: Aalto University, Finland

2023 – Ongoing

- **Average grade:** 5.0/5.0
- **Relevant coursework:** *Complex networks, Quantum Machine Learning, Reinforcement Learning, Special Assignment in Speech and Language Processing*

First year: University of Trento, Italy

2022 – 2023

- **Average grade:** 28.75/30, GPA:3.9/4.0
- **Relevant coursework:** *Machine Learning, Deep Learning, Computer Vision, Digital Image and Video Processing, Natural Language Understanding*

B.Sc. in Computer, Communication and Electronic Engineering

University of Trento, Italy

2019 – 2022

- **Grade**: 110/110 (with honours), Average Grade: 28.48/30, GPA: 3.9 / 4.0
- **Relevant coursework:** *Embedded Systems, Formula SAE laboratory, Advanced programming, PCB design and prototyping*

SKILLS

Programming

Python | C | C++ | SQL | Java

Libraries

Numpy | Pandas | Matplotlib | Seaborn | PyTorch | Scikit-learn | DearPyGui | NLTK | Spacy | OpenCV

OS and tools

Linux | MacOS | Windows | Git | Bash | Docker | Latex | Markdown

Soft skills

Leadership | Time Management | Problem solving | Critical thinking | Decision making

PROJECTS (CONTINUED)

Disease spreading network analysis

[Network analysis] - Aalto University

December 2023

Built a **Susceptible-Infected** (SI) disease spreading model using a **temporal network** from air transport data. *Repository*

Stepper motor test bench

[Bachelor's Thesis] - ProM Facility

March 2022 - July 2022

Created an innovative Step Motor testbench prototype with two **STM32** based units and a fully custom **Python GUI**. *Repository*

Low Voltage Battery Management System firmware

[Embedded Systems] - E-Agle Trento Racing Team

Oct 2021 - July 2023

- Developed the firmware of a custom PCB (BMS LV) in charge of managing the power supply of all low voltage components of the Formula Student car "Fenice EVO". (*Repository*).
- Guaranteed safety compliance with respect to the *Formula Student Germany rules*

Solar Azimuth and eLevation Motorized lOcator (SALMO)

[Embedded Systems] - University of Trento

March 2022 - July 2022

Designed, produced and programmed a custom PCB used for driving a tracking solar panel system, using GPS location and a MPPT (Maximum Power Point Tracking) algorithm to maximise the incident power. *Repository*

LANGUAGES

English: Professional proficiency
Italian: Native proficiency
Spanish: Elementary proficiency
Finnish: Elementary proficiency

ACHIEVEMENTS

4th Place Winner (out of 100+ teams) at Huawei Challenge

Junction 2023 Hackathon

Nov 2023

App presentation (*Video*)

Winner of the Italian rugby U18 championship

Italy

Season 2018/2019

Winner of the Italian rugby U18 championship

Italy

Season 2016/2017