ALBERTO TRABACCHIN

Mechatronics Engineer

🌐 My Portfolio
📞 +39 3318114070
📍 Noale, Italy

✉ alberto.trabacchin@gmail.com
⌂ github.com/alberto-trabacchin
in/alberto-trabacchin

SUMMARY

Mechatronics Engineering Master's graduate with a passion for embedded systems and computer vision. Aspiring to secure functional safety engineering positions, especially in the automotive and aerospace sectors.

SKILLS

Languages: C, C++, Python, MATLAB/Simulink
Frameworks: PyTorch, Tensorflow, OpenCV
Technologies: Git, CMake, Unity C testing
Environments: RTOS (AVR, ARM), Linux

PROJECTS

PyTorch
OpenCV

DriViSafe (Master's thesis)   **github.com link**
Research collaboration with Magna International which involves critical scenarios' detection for improving ADAS systems. DriViSafe follows two different approaches: the interaction between the gaze of the driver and road-vulnerable users (pedestrians and cyclists), and a more general frame classification.

C, Unity
CMake
Doxygen

Blockchain simulator   **github.com link**
Collaborative project presenting a blockchain simulator based on SHA-256 encryption, developed as a bachelor's project by a team. Opportunity of experimenting with teamwork, incorporating technologies like Git, testing with Unity, and generating clear documentation through Doxygen.

MATLAB, C

Delta robot analysis (Bachelor's thesis)
Bachelor's thesis project on the ABB IRB-360 delta robot, focusing on kinematics for trajectory generation and dynamics for motor-side torque analysis.

C, Arduino
Multisim
Eagle

3-axis C.N.C. milling machine
Contributed to the development of a 3-axis C.N.C. milling machine, utilizing Arduino for motor control and establishing PC connectivity via a serial bus. Designed the PCB for sensor conditioning.

EDUCATION

10/2021 - Current   **Master's degree in Mechatronics Engineering**   **University of Padova - Italy**
Embedded systems programming (multithreading in C++).
AC drives for industry and electric mobility (PMSM, SynRM, HSM, IM).
Optimal adaptive control (state-space modeling, LQG control).
Power electronics (MOSFET, BJT, IGBT, SCR, DC-DC converters).

10/2022 - Current   **Master's degree in Electrical and Computer Engineering**   **Yokohama National Univ. - Japan**
Traditional computer vision (calibration, SIFT, RANSAC, visual odometry).
DL-based computer vision (classification, object detection and tracking).
Safety regulations for automotive industry (ISO 26262, ISO 22737).

10/2018 - 9/2021   **Bachelor's degree in Mechatronics Engineering [106/110]**   **University of Padova - Italy**
Control systems theory, electrical machines and drives.
Industrial informatics (Linux C programming, Git, CMake, Doxygen).
Analog and digital circuits theory, microcontrollers, DSP, FPGA.

9/2013 - 7/2018   **Technical high school diploma in Electronics [100/100]**   **I.I.S. Levi-Ponti - Italy**
Design and implementation of PCBs with analog and digital circuits.
Embedded systems with Arduino Uno (sensor readings, signal conditioning).

EXPERIENCE

7/2019 – 9/2019
internship

Refrigeration engineer Intern   **Blauwer S.p.a. - Italy**
· Developed an Excel-VBA application to facilitate the selection of components based on design information.
· Gained exposure to cross-sector collaboration within the engineering department.
`Excel  /  Solidworks`

7/2017 – 8/2017
internship

Robotics electrician Intern   **Dal Maschio S.r.l. - Italy**
· Teamworking spanning from mechanical assembly to electrical cabling and testing, providing a comprehensive insight into the overall manufacturing process.

LANGUAGES

English - B2+, **Italian** - native