Filippo **Bosi**

MSc IN ELECTRICAL ENGINEERING - AUTOMATION AND ROBOT TECHNOLOGY

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Soon-to-be-graduated Robotics and Automation Engineer

As a Robotics and Automation Engineer Graduate, I plan to leverage my skills in software, architecture, simulation, and robot assembly to design, develop, test, and deploy robotic systems. Thriving in dynamic work environments, I am enthusiastic to collaborate closely with industry experts to pioneer innovative robots that push production efficiency to new heights.

Experience

COBOD International   *Copenhagen, Denmark*

ROBOTICS ENGINEER – STUDENT ASSISTANT   *Oct 2022 - Present*
- Awarded student worker of the year 2023.
- Built and programmed robotic solutions to redefine the construction industry.
- Skills: *Robot Operating System (ROS), ROS2, Robot assembly, RoboDK, C++, CMake, Qt, Ubuntu, git, RViz, Gazebo, SOLIDWORKS.*

LIAM LAB   *Bologna, Italy*

PLC PROGRAMMER – BSc THESIS PROJECT   *Feb 2021 – Oct 2021*
- Developed an algorithm for phasing and buffering e-commerce items.
- Tested and debugged the solution on a digital twin of a packaging machine.
- Skills: *Beckhoff TWINCAT3, ISG-Virtuos, CoDeSys, IEC 61131-3.*

Education

DTU - Technical University of Denmark   *Lyngby, Denmark*

MSc IN ELECTRICAL ENGINEERING – AUTOMATION AND ROBOT TECHNOLOGY   *Feb 2022 – Mar 2024*

KAIST - Korea Advanced Institute of Science and Technology   *Daejeon, South Korea*

Exchange program – DEPARTMENT OF MECHANICAL ENGINEERING   *Feb 2023 – Jun 2023*

Alma Mater Studiorum - University of Bologna (110L)   *Bologna, Italy*

Double Degree BSc IN AUTOMATION ENGINEERING   *Sep 2018 -Oct 2021*

Tongji University   *Shanghai, China*

Double Degree BSc IN CONTROL THEORY AND CONTROL ENGINEERING   *Aug 2019 – Feb 2020*

Certifications

ETH Zürich - edX   *Jan 2022*

AMRx: AUTONOMOUS MOBILE ROBOTS COURSE

TOEFL iBT – Score: 102   *Mar 2021*

Honors & Awards

2023 **Student Worker of the year** at COBOD International, awarded to the best performer student worker   *Denmark*

2019 **AlmaTong scholarship winner**, awarded to 10 students for a one-year exchange program at Tongji University *Italy and China*

Projects

Mapping and Navigation for a Robot Waiter
- Developed mapping and navigation algorithms for a robot waiter using PRM and Adaptive Monte Carlo Localization.
- Implemented in ROS and Gazebo with TurtleBot3, including MATLAB for map generation and localization.
- Evaluated ROS2 Nav2 performances and implemented a PRM planner in MATLAB.

Whole-body dynamics of a quadruped robot for simulation in RaiSim
- Computed various dynamic parameters for the Aliengo quadruped robot with special algorithms in C++.
- Calculated linear and angular velocity, mass matrix using CRBA, system nonlinearities with RNEA, and generalized acceleration using ABA.

& more projects available on my personal website

Skills

ROS/ROS2, Gazebo, C++, RoboDK, Ubuntu, git, CMake, Qt, Python, MATLAB&Simulink, SOLIDWORKS, Beckhoff TWINCAT, CoDeSys, IEC 61131-3

Languages

Italian (Native proficiency)   **English** (Full professional proficiency)   **Spanish** (Limited professional proficiency)   **Danish** (Elementary proficiency)