

Filippo Bosi

FULL-STACK ROBOTICS ENGINEER | MSc IN ELECTRICAL ENGINEERING

✉ filippo.bosi24@gmail.com | 🏠 bosi.dev | 📷 [filippo-bosi](https://www.instagram.com/filippo-bosi) | 🌐 [filippo-bosi](https://www.linkedin.com/in/filippo-bosi)



Full-Stack Robotics Engineer | ROS 2 & EtherCAT Expert

Robotics Engineer with hands-on experience at COBOD International developing and integrating robotic systems for large-scale construction automation. Skilled across the full robotics stack, from software architecture and motion control to real-time communication via EtherCAT. Passionate about building intelligent, modular, and scalable robotic systems using ROS 2, C++, and simulation tools.

Experience

COBOD International

Copenhagen, Denmark

ROBOTICS ENGINEER

Oct 2022 - Present

- Designed modular motion-control architectures and real-time software for robotic construction systems using ROS 2 and EtherCAT.
- Integrated servo drives via CAN over EtherCAT (CoE) and implemented ROS 2 controllers for motion and diagnostics.
- Built simulation and motion-planning tools with MoveIt 2 and Gazebo to test and validate large-scale robotic platforms.
- Collaborated with EU partners on multi-robot system integration within the Horizon project *RoBétArmé*.

LIAM LAB

Bologna, Italy

PLC PROGRAMMER – BSc THESIS PROJECT

Feb 2021 – Oct 2021

- Developed and tested a control algorithm for a packaging line digital twin.
- Implemented the solution with Beckhoff TwinCAT 3 and CoDeSys, compliant with the IEC 61131-3 standards.

Education

DTU - Technical University of Denmark

Lyngby, Denmark

MSc IN ELECTRICAL ENGINEERING – AUTOMATION AND ROBOT TECHNOLOGY (*Grade: 12/12 for final project*)

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

RoBétArmé – SFR Robot (EU Horizon Project: robetarme-project.eu)

- Developed the Shotcrete & Finishing Robot (SFR) and led the software integration of servo drives with the ROS 2 stack via EtherCAT (CoE).
- Coordinated integration and testing with multiple EU research and industry partners.

COBOD Multifunctional Construction Robot

- Developed a Grasshopper-based inverse-kinematics plugin and moveit2gcode ROS 2 node for G-code generation.
- Integrated the robotic system's servo drives with ROS 2 via EtherCAT to leverage `ros2_control` for real-time motion control.

& more projects available on bosi.dev

Skills

ROS 2, MoveIt 2, Gazebo, C++, Python, CMake, Ubuntu RT Kernel, EtherCAT, CANopen (CoE), OPC UA, Git, Zenoh, Docker, RoboDK, SOLIDWORKS

Core Focus: Full-stack robotics • Real-time control • Motion planning • System integration • Robot simulation & calibration

Languages

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