Bernardo **Lanza**

Ph.D., Robotics Engineer

About me

Hey there! I'm Bernardo, the tech wizard who turns orchards into high-tech havens using AI and computer vision. Armed with a Ph.D. and a passion for mechatronics, I blend robotics and nature like no other. When I'm not revolutionizing agriculture, you can find me diving into history, tinkering with DIY IoT gadgets, or volunteering for community causes. Let's team up and create the future together!

personal

Bernardo Lanza - 2 Sept 1993 - Italy

Areas of specialization

Metrology • Statistics • Optical sensors • Embedded Linux • Computer Science • Dynamics • Physics

Soft skill

Manual and Mechanical skill • Creativity • Critical thinking

Interests

Arduino / Blockchain / Electronics / Biology / History / Games • Volunteering

Languages

Italian	C2
English	C1

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Short Resume

2022–2024 — **Ph.D.**
Lead · Mechanical and Thermal Measurement Lab
Vision system for Agricolture

2024 — **Ph.D. research abroad**
Research Scientist · University of Lleida Spain
3D recostruction of orchards using LiDARs and RGB-D sensors (SLAM-IMU-GNSS)

2022–2023 — **Junior developer**
stage · Prospecto
MCU Sensors and Optical Measurements for Agriculture

2021–2022 — **Research Fellowship**
Research Scientist · University of Brescia
Object recognition for human motion analysis and plant detection (mediapipe - YOLO)

Degrees

2025 — **Computer vision for agriculture**
Ph.D. · University of Brescia

2020 — **Mechatronic Engineering**
M.S. · University of Trento

2017 — **Industrial Engineering**
B.S. · University of Trento

Skills

- C++
- Statistics
- Python
- Linux
- Computer Vision
- AI (DL and ML)

Projects

2023 — **Gesture recognition for Healthcare 4.0**
Research Scientist · University of Brescia
Vision-based system to monitor surgical handwashing using gesture recognition. Implemented machine learning to analyze collected data.

2021 — **Vision system for body and gym gesture recognition**
Lead · University of Brescia
Vision-based pose estimator for human body and gym gesture recognition.

Certificates & Grants

2023 Best poster awards, IEEE Metrology for Agriculture and Forestry

2021 DeepLearn 2021 Summer school

Lecture

2023 "Probabilistic Sensor Fusion: From Naïve Bayes to Kalman Filters: *Lab. of Mechanical and Thermal Measurements, 2023.*

Publications

2023 *First Step Towards Embedded Vision System for Pruning Wood Estimation* , IEEE Metrology for Agriculture and Forestry

2023 *Gesture recognition for Healthcare 4.0: a machine learning approach to reduce clinical infection risks* IEEE Xplore.

2022 *Deep learning for gesture recognition in gym training performed by a vision-based augmented reality smart mirror*, ISBS, International Society of Biomechanics

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