

# Ismaele Carbonari

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## Education

**University of Trento, Trento, Italy**      *Sep 2023 – Present*

Bachelor's Degree in Computer Science

**I.T.T. Buonarroti, Trento, Italy**      *Sep 2018 – Jun 2023*

High School Diploma in Computer Science

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## Experience

**Femtorays (Fondazione Bruno Kessler), Trento, Italy**      *Jun 2025 – Present*

Research & Development Intern

- Contributing to software development and research in cutting-edge photonics technologies.
- Collaborating within a multidisciplinary team at FBK, gaining exposure to innovation-driven environments.

**Eagle-TRT Formula SAE Team, Trento, Italy**      *Oct 2024 – Present*

Telemetry Engineer

- Developed and maintained the telemetry system of the Formula SAE electric race car.
- Ensured real-time data acquisition and monitoring to support vehicle performance optimization.

**Freelance Software Developer, Remote**      *Aug 2023 – Present*

Full-Stack Developer

- Designed and built custom applications using **Java, Python, C++, JavaScript**, and frameworks such as **React, Angular, Django, Spring**.
- Developed scalable and modular software architectures to improve performance and maintainability.
- Integrated APIs and external services to enhance application functionality and interoperability.
- Managed full-stack projects including **frontend, backend, and databases (MySQL, MongoDB, PostgreSQL)**.

**Michele Merz, Spini di Gardolo, Italy**      *Jul 2022*

IT Technician Intern

- Installed and configured software/hardware for small businesses.

- Assisted in frontend and backend development tasks.

**Panetteria Carbonari, Folgaria, Italy**      *Jun 2021 – Sep 2022*

Baker

- Managed bread baking and preparation for daily sale.
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## Projects

**Autonomous Robot Platform**      *2024 – Present*

- Designed and built a robot integrating **ROS, SLAM, LiDAR, vehicle state estimation**.
- Implemented real-time sensor fusion for navigation and mapping.

**Offline Voice Assistant**      *2024 – Present*

- Developed an AI-driven assistant using **PyTorch, Scikit-learn, Vosk** for offline speech recognition.
- Experimented with **Machine Learning models** for intent classification and natural language understanding.

**IoT & Smart Systems**      *2023 – Present*

- Built an **automated irrigation system** and **robotic arms** for practical IoT applications.
- Designed low-cost, scalable solutions with sensors and microcontrollers.

**Home Lab & Cybersecurity**      *2022 – Present*

- Set up a home lab environment with **virtualization, networking, subnetting**, and **Kubernetes clusters**.
  - Explored cybersecurity through the **CyberChallenge.IT** competition and personal projects (e.g., honeypot deployment).
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## Activities & Extracurriculars

**Gruppo Giovani Carbonare**      *2016 – Present*

Volunteer

- Organized community events and assisted elderly people with local initiatives.

**Robotics Competition – National Judge**      *2022*

- Served as a referee in the Italian national robotics competition **RoboCup Junior**.

**Ex MMA Athlete**      *2018 – 2021*

- Competed in Mixed Martial Arts, developing discipline, resilience, and teamwork.

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## Awards & Certifications

- **CyberChallenge.IT** – Ethical Hacking Training & National Competition 2024
  - **Cisco CCNA v7** – Routing & Switching Certification 2022
  - **Italian Olympiad in Informatics** – 5th Place Regional 2022
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## Skills & Interests

**Programming & Software:** Python, C/C++, Java, JavaScript, C#, Bash, React, Angular, Django, Spring

**Machine Learning & AI:** PyTorch, Scikit-learn, NumPy, Pandas, Data Analysis, Computer Vision

**Robotics & Embedded Systems:** ROS, SLAM, LiDAR, Arduino, ESP32, IoT, Vehicle State Estimation

**Infrastructure & Networking:** Linux, Docker, Kubernetes, Networking, Subnetting, Cybersecurity, Honeypot Deployment

**Electronics & Prototyping:** PCB Design, Soldering, Sensor Integration

**Languages:** Italian (native), English (B2), German (A2)

**Interests:** Robotics, AI, Cybersecurity, Home-labbing, Fitness & Sports