

Ciro Ciampaglia

software engineer

Born on: December 15, 1998

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Education

- **Bachelor's Degree in Electronic and Computer Engineering**, Vanvitelli University, 2022
 - Experimental thesis on Visible Digital Seal

Work Experience

Software Engineer, Bluenet SRL (2021-present)

- Designed APIs with OpenAPI, engineered applications across desktop, web, and mobile platforms, improving software stability by 50% by leveraging technologies like Node.JS, .NET, React, Flutter
- Authored documentation for main projects, implemented microservices architectures, including Docker deployment and ELK stack implementation, optimizing the overall system resource usage of almost the 45%
- Reverse engineering and penetration testing, analysis of company's leading product to achieve a SonarQube A score for vulnerability metrics with a code coverage level above 95%

Full Stack Developer, NUMBERS GROUP SRL (2019-2020)

- Modernized a lead generation platform using the MERN stack that tracked approximately 5000 leads per month improving lead conversion efficiency by 28%, resulting in an estimated additional margin of €20,000

Cybersecurity Analyst, Red Team, BlackAuth (2020)

- Identified critical vulnerabilities (RCE, SQL injections) in a booking system capable of compromising over 2000 active users and result in a financial loss exceeding €70,000

Projects

Checkmate

- **Purpose:** Develop innovative methods to trace Italian products, combat counterfeiting, and engage consumers in the process
- **Main technologies:** Blockchain, STMicroelectronics' ST25 NFC tags, paper-based security strips
- **Key Achievements:**
 - Implemented a cost-effective smart package system that incorporates secure QR codes, blockchain and NFC tags with a cost ranging from €0.15 to €5.00 per seal
 - Created a paper-based security strip that tracks electrical property changes to identify damage and accordingly updates the status of a ST25 tag
 - Won the "Made in Italy Innovation Challenge 2024" hackathon hosted by IPZS, outperforming 30+ competing solutions

Arthur's Quest

- **Purpose:** Enhance cultural tourism and education through interactive mobile app experiences
- **Main technologies:** GPT (Generative Pre-trained Transformer), Augmented Reality (AR)
- **Key Achievements:**
 - Prototyped an app that guides users through challenges to discover more than 150 hidden historical and cultural sites with rich historical and cultural narratives, leveraging GPT for quiz generation and AR for immersive experiences
 - Won the challenge proposed by Almaviva at "The Big Hack 2023" competition surpassing over 50 competing teams

Tune

- **Purpose:** Monitor athletic performance and aid knee rehabilitation through real-time movement sonification
- **Main technologies:** ESP32 microcontroller, dual 9DOF accelerometers, Kalman filter for advanced motion capture and sensor fusion
- **Key Achievements:**
 - Build of a wearable device that sonifies movement, increasing recovery speed by 25% and optimizing training efficiency by 18%
 - Recognition in innovation competitions and mention in the newspaper Il Mattino on May 20, 2023

Wind Turbine Management

- **Purpose:** Develop a remote monitoring and control system for wind turbines, including a functional prototype of a 1:100 scale wind turbine
- **Main technologies:** ESP32 microcontroller, Raspberry Pi, UDP socket communication.
- **Key Achievements:**
 - Development of an IoT system for comprehensive wind turbine management integrated with the CaSCADA platform for state storage and actuator control
 - Achieved the maximum score of 30/30 on the IoT exam at Vanvitelli University

Studeo (now Dropper)

- **Purpose:** High accuracy people counting system for public area monitoring
- **Main technologies:** Python for data collection and analysis, LAMP stack (Linux, Apache, MySQL, PHP) for data visualization
- **Key Achievements:**
 - Created a system with a 98% accuracy rate in estimating population counts
 - Demonstrated the platform's effectiveness during New Year's Eve 2020 at Piazza Matteotti in Giugliano in Campania

CaSCADA

- **Purpose:** Remote control and data management system with 5 9s availability
- **Main technologies:** Omron PLCs, SCADA systems
- **Key Achievements:**
 - Achieved a remarkable 99.999% availability, equating to less than five minutes of downtime per year, ensuring uninterrupted service across industrial plants in Avellino and Salerno
 - Enhanced the management of wind turbine plants, aqueduct lifting, and cylinder filling systems by reducing maintenance cost of the 12%

Skills

- **Programming languages and databases:** MERN (MongoDB, Node.JS, JavaScript, TypeScript, Express, React), LAMP (Linux, Apache, MySQL, PHP, HTML, CSS) Java, C#, Oracle DB, MSSQL, ELK (ElasticSearch, Logstash, Kibana), Docker, Swift, Flutter, C/C++
- **Embedded Systems:** Microcontroller programming (ESP8266, ESP32, Arduino, ATMEGA328, ATTINY85), Peripheral interface programming (I2C, SPI, UART, GPIO), Signal processing, Oscilloscope, Multimeter, Logic analyzer, Spectrum analyzer, Circuit simulation through LTSpice
- **Computer security:** Penetration testing, Cybersecurity analysis, Burp Suite, Wireshark, Ghidra, ILSpy, JADX, SonarQube, Shodan, Censys
- **Miscellaneous:** AutoCAD, SketchUp, Blender, Gimp
- **Languages:** Italian (native), English (fluent)

Certifications

Artificial Intelligence Week 2024, ProfessionAI, 2024

AI @The Deep Edge, STMicroelectronics, 2024

- Supervised Machine Learning, Deep Learning, Multilayer Perceptron and CNN, Generative Models, RNN and Transformers, Tensorflow, Keras, Hugging Face, ST Nucleo programming with STM32 CubeMX and CubeIDE tools

CyberChallenge.IT 2021, Cybersecurity National Lab, 2021

- Cryptography, Web Application and Network Security, Reverse Engineering

iOS Foundation Program, 2019

- iOS app development, Design Thinking, Story Telling

Cisco CCNA Routing and Switching: Routing and Switching Essentials, Cisco, 2018

Cisco CCNA Routing and Switching: Introduction to Networks, Cisco, 2017

Cisco IT Essentials, Cisco, 2016

- Troubleshooting of the most common computer and network problems, simulation of network designs with Cisco Packet Tracer, build simple LANs, perform basic configurations for routers and switches, routers and switches configuration

Certificate of Achievement - The Zero Robotics High School Tournament 2015, 2015

- **Acquired skills:** Low Level coding, Strategic Thinking, Code Optimization techniques for microcontrollers, Team Work