



# Vincenzo Barbuto

## PhD Student in ICT

📍 Rende (CS), Italy

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### Education

<b>PhD in Information and Communication Technologies</b> , <i>University of Calabria</i> <a href="#">🔗</a> Intelligence at the IoT Edge: models and techniques for enabling smartness in IoT systems.	11/2022 – present Cosenza, Italy
<b>M.S. Computer Engineering for the Internet of Things</b> , <i>University of Calabria</i> <a href="#">🔗</a> Final Score 110/110 cum laude	09/2020 – 09/2022 Cosenza, Italy
<b>M.S. in Data Science and Network Intelligence</b> , <i>Télécom SudParis, Institut Polytechnique de Paris</i> <a href="#">🔗</a> GAP 18,34/20	09/2021 – 07/2022 Évry, France
<b>B.S. in Computer Engineering</b> , <i>University of Calabria</i> <a href="#">🔗</a> Final Score 105/110	09/2017 – 09/2020 Cosenza, Italy

### Professional Experience

<b>Teaching Assistant</b> , <i>University of Calabria</i> <a href="#">🔗</a> Assisted first-year students in learning the C programming language	03/2023 – 09/2023 Cosenza, Italy
<b>Research Trainee - IoT and Digital Twins</b> , <i>DICE Lab</i> <a href="#">🔗</a> <ul style="list-style-type: none"><li>Implemented a <b>Traffic Monitoring System</b> based on <b>Digital Twins</b> and <b>Edge AI</b></li><li><b>99,87% of bandwidth saved</b> with respect to a Cloud-centric approach</li><li><b>inferences performed from 2 to 10 times faster</b> in the edge device than in a remote server</li></ul>	02/2022 – 06/2022 Évry, France
<b>Software Engineer</b> , <i>Caliò Informatica S.R.L.</i> <a href="#">🔗</a> <ul style="list-style-type: none"><li>Reduced the http request throughput of a platform that manages over five million invoices per year by <b>using the browser cache</b></li><li>Reduced the processing time of a huge number of downloaded invoices by <b>exploiting threads and parallelism in C#</b></li><li><b>Exploited SQL bulk functions</b> to reduce both the insertion and update time of warehouse's items in a Content Management System (CMS)</li></ul>	12/2020 – 09/2021 Cosenza, Italy

### Projects

<b>Diabetes Management System</b> , IoT system able to manage autonomously Type 1 Diabetes Mellitus patients <ul style="list-style-type: none"><li>Designed an improved IoT system using an <b>hybrid-fog network architecture</b> that exploits <b>in-network computing</b></li><li><b>Reduced computing time by 70%</b> moving some computation from the cloud to <b>edge and fog devices</b></li></ul>	2022
<b>Health Environment</b> , IoT system able to monitor remotely the environment of a home for elderly <ul style="list-style-type: none"><li><b>Acquired experience with MQTT protocol using OMA LwM2M semantic</b> for the topic definition</li><li>Acquired experience with time series databases such as <b>InfluxDB</b></li><li>Processed, analyzed and displayed huge amount of data acquiring experience with tools such as <b>NodeRed</b>, <b>Grafana</b> and <b>OpenHAB</b></li></ul>	2021

## Publications

- Towards an Edge Intelligence-based Traffic Monitoring System, IEEE** [↗](#) 10/2023  
Barbuto, V.; Savaglio, C.; Minerva, R.; Crespi, N.; Fortino, G.  
In 2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC), IEEE.
- Opportunistic Digital Twin: an Edge Intelligence enabler for Smart City, ACM** [↗](#) 08/2023  
Savaglio, C.; Barbuto, V.; Awan, F. M.; Minerva, R.; Crespi, N.; Fortino, G. ACM  
Transactions on Sensor Networks
- Disclosing Edge Intelligence: A Systematic Meta-Survey, MDPI** [↗](#) 03/2023  
Barbuto, V.; Savaglio, C.; Chen, M.; Fortino, G. Big Data Cogn. Comput. 2023, 7, 44.

## Awards

- Most deserving student, in Computer Engineering for the IoT** 2022  
Most dedicated and highest-achieving student among the Internet of Things (IoT) students within the Department of Computer, Modeling, Electronic, and System Engineering, University of Calabria for the academic year 2020-21 and 2021-22
- DIMES Excellence Program, in Computer Engineering** 2021  
Outstanding undergraduate student in the Department of Computer, Modeling, Electronic, and System Engineering, University of Calabria for the academic year 2020-21