Giuseppe Ciacco

Email: giuseppeciacco.gc@gmail.com

Gender: Male   **Date of birth:** 31/10/1999   **Nationality:** Italian

WORK EXPERIENCE

[01/09/2023 – Current]

University research assistant

Politecnico di Torino   https://www.polito.it/

City: Torino | **Country:** Italy | **Email address:** politecnicoditorino@pec.polito.it | **Business or sector:** Professional, scientific and technical activities

I'm currently working in a research program developing innovative and efficient electromagnetic solvers specifically for biomedical brain imaging applications. This role involves in-depth research across theoretical, algorithmic, and practical aspects, while utilizing my expertise in C++ programming, electromagnetic simulation tools, and high-performance computing.

[01/03/2021 – 10/06/2021]

Intern student

Politecnico di Torino   https://www.polito.it/

City: Torino | **Country:** Italy | **Email address:** politecnicoditorino@pec.polito.it

I contributed to software development for the European Research Council (ERC) project ERC-321 at Politecnico di Torino. This experience allowed me to gain valuable knowledge in high-performance computing (HPC), including multi-threaded programming with OpenMP, multi-core programming with MPI, and managing cluster environments using SLURM.

EDUCATION AND TRAINING

[01/10/2021 – 28/07/2023]

Master's Degree - Computer Engineering

Politecnico di Torino   https://www.polito.it/

City: Torino | **Country:** Italy | **Field(s) of study:** Engineering, manufacturing and construction | **Final grade:** 110 cum Laude | **Level in EQF:** EQF level 7 | **Type of credits:** CFU | **Number of credits:** 120 | **Thesis:** Parallel Computational Models for Low and High Frequency Electromagnetics Scenarios

Master's Degree in Computer Engineering (LM-32)

Attended courses

- Data Science and Database technologies (30L/30)
- Information systems (27/30)
- Networks services and technologies (27/30)
- Computer architectures (30L/30)
- Web Applications I (30L/30)
- Software engineering (30/30)
- Formal languages and compilers (30L/30)
- System and device programming (30L/30)
- Software Engineering II (30L/30)
- Computer systems security (28/30)
- Human Computer Interaction (30L/30)
- Big data: architectures and data analytics (28/30)
- Web Applications II (30L/30)

Acquired skills:

- C/C++
- Rust

- MIPS Assembly
- ARM v7 Assembly
- OpenMP
- MPI
- Javascript/NodeJS
- MATLAB
- ReactJS
- React Native
- Kotlin

[01/10/2018 – 23/07/2021]   **Bachelor's Degree - Computer Engineering**

Politecnico di Torino   https://www.polito.it/

City: Torino | **Country:** Italy | **Field(s) of study:** Engineering, manufacturing and construction | **Final grade:** 110 cum Laude | **Level in EQF:** EQF level 6 | **Type of credits:** CFU | **Number of credits:** 180

Bachelor's Degree in Computer Engineering (L-8)

Attended courses

- Mathematical analysis I (30L/30)
- Computer science (28/30)
- Chemistry (29/30)
- Mathematical analysis II - Talenti (29/30)
- Physics I (30L/30)
- Linear Algebra and Geometry (30L/30)
- Algorithms and Programming (30L/30)
- Numerical Computing: methods and software (30L/30)
- Electrical circuits and Network Analysis (30L/30)
- Physics II - Talenti (30L/30)
- Object-oriented programming (30L/30)
- Database (30L/30)
- Computer systems (29/30)
- Mathematical methods for engineers (30L/30)
- Operating systems (30L/30)
- Signal theory and Signal processing (30L/30)
- Electronic systems, technologies and measurements (30L/30)
- Computer networks (29/30)
- Applied Electronics (30/30)
- Automatic control (30/30)

Acquired skills

- C/C++
- Java
- MIPS Assembly
- MATLAB
- BASH
- SQL

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

My Digital Skills

Windows | Social Network | C/ C++/ C# | Matlab/Simulik | Good programming skills (C, Python, Java, C++) | Microsoft Office | Programming Languages: Python, Java, Javascript (+Typescript), C, C#,, Rust | Strong knowledge of parallel programming (MPI and threads) | C++ (ACM, MPI, OpenMPI)

PUBLICATIONS

[2023]

[Linear-in-Complexity Computational Strategies for Modeling and Dosimetry at TeraHertz](#)

Reference: V. Giunzioni, G. Ciacco, C. Henry, A. Merlini, F. P. Andriulli, 2023 IEEE CAMA, pp. 950-953

V. Giunzioni, G. Ciacco, C. Henry, A. Merlini and F. P. Andriulli, "Linear-in-Complexity Computational Strategies for Modeling and Dosimetry at TeraHertz," *2023 IEEE Conference on Antenna Measurements and Applications (CAMA)*, Genoa, Italy, 2023, pp. 950-953, doi: 10.1109/CAMA57522.2023.10352703.

This work presents a fast direct solver strategy allowing full-wave modeling and dosimetry at terahertz (THz) frequencies. The novel scheme leverages a preconditioned combined field integral equation together with a regularizer for its elliptic spectrum to enable its compression into a non-hierarchical skeleton, invertible in quasi-linear complexity. Numerical results will show the effectiveness of the new scheme in a realistic skin modeling scenario.

Link: https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10352703

HONOURS AND AWARDS

[07/05/2017]

Olimpiadi della Matematica, Finale Nazionale - Menzione d'Onore (Honourable Mention)
Awarding institution: Unione Matematica Italiana

Link: http://olimpiadi.dm.unibo.it/archivio/finali-nazionali/cesenatico-2017/

[23/07/2021]

Young Talent Project Awarding institution: Politecnico di Torino

The owner of this Badge has been selected for participation in the Young Talent Project and has successfully completed the entire educational pathway by passing all the annual merit checks required and participating in the mandatory activities offered.

The course, addressed to students of different disciplinary areas, lasts three years for the courses of the Engineering Area and two years for the courses of the Architecture Area and provides for activities intended exclusively for the participants.

Link: https://bestr.it/award/show/Zs_FusGVS26oEcNwRGTH2g?ln=en

DRIVING LICENCE

Motorbikes: AM	17/11/2023 – 31/10/2034	
Cars: B	17/11/2023 – 31/10/2034	