Angelantonio Squicciarini

Curriculum Vitae

Personal Details

Birth	November 04, 1997
Nationality	Italian
Address	Via Curzio dei Mille, 12 70123 Bari, Italy
Phone	(+39)3497356738
Mail	angelantoniosquiccia97@gmail.com

About Me

I have a great passion for engineering as well as physics, chemistry and mathematics. The firm dedication to theoretical subjects has led me to give private lessons in physics, analysis, geometry, electrical engineering, fluid dynamics and construction sciences to university students. In addition to science, I have a strong involvement in fitness and wellness, where I train daily following scientific and nutritional training techniques. In the past, I practiced: karate, fishing, swimming, football and dance at a competitive level. I took a photography course, where I learned the functioning and use of the reflex, as I like being able to photograph people, objects and landscapes. In recent years, I have developed a marked interest in pastry making, perfumes and wines. English and French are two very important languages for me. In my free time, I like to read books written in these two languages to expand my vocabulary. I can consider myself an ambitious guy and willing to work in a team.
I created a web page written in html, where it is possible to find all my papers and documents: https://angelantonio1997.github.io/Angelantonio/

Education

2020–2022 **M.Sc. Mechanical Engineering, Polytechnic University of Bari**, *Italy*.
Thesis Title: Microfluidic devices for medical applications

2016–2020 **B.Sc. Mechanical Engineering, Polytechnic University of Bari**, *Italy*.
Thesis Title: Analysis of thermal signals with deep neural networks for non-destructive control in finished glass fiber components

2011–2016 **Diploma, Istituto Tecnico Tecnologico G.Marconi**, *Bari*, *Italy*.

Work Experience

02/22–08/22 **Ph.D. Student**, *CNRS, Orléans, France*

Task:

Working on the ERC TRACE-it project: Control of particle flow driven by local concentration gradients in porous geological media. I studied the phenomena of diffusiophoresis and electrophoresis for the transport of colloidal particles in porous media.

A CFD code was written using OpenFOAM software to resolve particle transport at the pore scale. The numerical results were validated with experimental data.

The theory of homogenization was studied to have a large-scale diffusion phoresis model.

I was followed in this training by Prof. Sophie Roman and Dr. Cyprien Soulaine.

I resigned my PhD contract on 31/08/2023.

02/22–08/22 **Curricular Internship**, *CNR NANOTEC and STMicroelectronics, Lecce, Italy*

Task:

I was part of the TITAN project (Tumor Immunotherapy by Nanotechnology) working on the research of microfluidic devices for engineered T cells for 6 months where I formulated the master's thesis.

My task was based on the study of new inertial microfluidic devices for cell focusing referring to scientific literature, design using CAD, fluid dynamics simulation using ANSYS FLUENT, optimization, building using 3D printers(wire,dlp), micro milling, casting, quality control and visualization of real results through a microscope.

I have implemented a code written in C language inside FLUENT, to be able to include absent forces in the program.

I was followed in this training by Prof. Marco Donato De Tullio, Dr. Dario De Marinis and Dr. Francesco Ferrara.

04/19–06/19 **Curricular Internship**, *CNR STIIMA, Bari, Italy*

Task:

Improve the accuracy in the detection of defects on a glass fiber composite material, going to use deep learning (deep learning) through the MATLAB program.

The network instruction no longer took place by locating the defect with a single pixel (i.e. a channel) but rather 5 (i.e. a pixel plus its surroundings made up of 4 pixels).

The learning was carried out through the temperature data obtained from a pulsed thermographic inspection.

I was followed in this training by Dr. Roberto Marani.

Computer Skills

Programming Languages	C, PYTHON, C++, HTML, CSS, MATLAB
CAD Software	SOLIDWORKS, AUTOCAD, INVENTOR, FUSION 360
CFD Software	POINTWISE, PARAVIEW, OPENFOAM, COMSOL, ANSYS FLUENT
Other Software	ELVEFLOW, MICROSOFT OFFICE, LATEX

Languages

Italian	Native Speaker
English	C1 Level (M.Sc. in English)
French	B1 Level
Spanish	A2 Level

Courses/Certificates

- I attended the "**Computational Contact and Fracture Mechanics**" course held by Prof. Marco Paggi for the PhD program at IMT School for Advanced Studies. The course lasted 20 hours and the lessons were entirely delivered online due to COVID 19.

- Collaboration in writing of the document **"MECHANICAL SYSTEM DYNAMICS"**, Department of Mechanics, Mathematics and Management, Master's Degree Program: Mechanical Engineering Polytechnic of Bari, Author Prof. Giuseppe Carbone.

- I attended the course "**Basics of non-equilibrium statistical physics and molecular simulation techniques**" held by Prof. Gerald Kneller, at the bâtiment de Physique-Chimie, Université d'Orléans. The course lasted 20 hours.

- I attended the course "**Initiation aux methods numériques et statistiques**" held by Prof. Didier Chauveau and Dr. Carine Lucas, at the Laboratoire d'Informatique Fondamentale, Université d'Orléans. The course lasted 20 hours.

- I attended the "**French course**" at the Institut de Français de l'Université d'Orléans. The course lasted 20 hours.

- I attended the course "**Advanced Numerical Analysis**" held by Prof. Sachin C. Patwardhan, at the Department of Chemical Engineering, IIT Bombay. The course lasted 50 hours and the lessons were entirely delivered online.

- I attended the course "**Microfluidics**" held by Prof. S. Chakraborty, at the Department of Mechanical Engineering, IIT Kharagpur. The course lasted 50 hours and the lessons were entirely delivered online.

- I attended the course "**Theory of Signals**" held by Prof. Tullio Bucciarelli, at the Department of Electrical Engineering, Università di Roma La Sapienza. The course lasted 25 hours and the lessons were entirely delivered online.

- I attended the course "**Homogenization Techniques and Application to Biological Tissues**" held by Prof. Micol Amar, PhD program of Methods and Mathematical Models for technology and society, Università di Roma La Sapienza. The course lasted 25 hours and the lessons were entirely delivered online.

- I attended the course "**Semi-continuity and Relaxation**" held by Prof. Micol Amar, PhD program of Methods and Mathematical Models for technology and society, Università di Roma La Sapienza. The course lasted 25 hours and the lessons were entirely delivered online.

- I attended the course "**Algebraic Topology**" held by Prof. Anthony Bosman at Department of Mathematics, Andrews University. The course lasted 50 hours and the lessons were entirely delivered online.

I authorize the processing of my personal data pursuant to Legislative Decree 101/2018 and art. 13 GDPR (EU Regulation 2016/679) for the purposes of personnel research and selection.

Bari, 28/08/2023

Angelantonio Spiricigni

Politecnico di Bari
Department of Mechanics, Mathematics and Management
via Re David 200 - 70125 Bari, Italy

June 29, 2023

To Whom It May Concern:

I met Angelantonio Squicciarini for the first time in 2021 at the Politecnico di Bari, where he was enrolled in the course of "Modeling of Complex Flow", for the Master's degree in Mechanical Engineering. He studied the subject with great motivation, showing a strong attitude for the discipline and a very good analytical capability. He obtained a final mark of 30/30. His strong interest in the discipline led him to continue studying fluid mechanics and related applications after the course. Under my supervision, he decided to work on his thesis focusing on microfluidic devices for medical applications, by means of numerical simulations and laboratory experiments. During his work he demonstrated a genuine interest for the research topic, showing good problem-solving skills, always carrying out independent work. He wrote a clear final thesis, with a very good overall quality.

Mr. Angelantonio Squicciarini completed the Master's degree in Mechanical Engineering in October 2022.

Angelantonio has shown a good capacity of quickly adapting to different research subjects, and a very good ability in programming. He is a polite and kind person. He worked with creativity and autonomy and is very motivated to interact with colleagues in an international and challenging environment. This makes me certain that he will succeed in his doctoral studies and beyond that.

If any additional information is needed, please do not hesitate to contact me.

Sincerely,

Marco Donato de Tullio
Full Professor of Fluid Dynamics
Phone: +39 080 5963794
Fax: +39 080 596 3411
E-mail: marcodonato.detullio@poliba.it

Politecnico di Bari

To Whom It May Concern

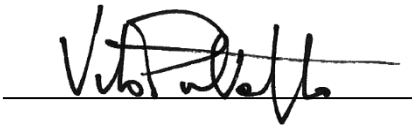
As a Professor in the teaching of “Principles of Electrical Engineering” for the Bachelor’s degree in Mechanical Engineering, delivered by the Department of Mechanics, Mathematics and Management of the Polytechnic of Bari, I had the opportunity to interact and meet the student Angelantonio Squicciarini, who showed particular interest in my subject.

Angelantonio is highly motivated and his interest in the topics covered, are supported by his diligent work. During his studies he repeatedly showed me how responsible and devoted he is to the subject. He is ambitious, determined, has a strong character and has optimal communication, participation and interaction skills.

For these reasons, I believe that Mr. Angelantonio Squicciarini is the ideal profile to continue doctoral studies.

Bari, 30/06/2023

Vito Puliafito



****

Vito Puliafito, Eng., Ph.D.
Associate Professor of Electrical Engineering - S.S.D. ING-IND/31 Department of Electronic and Information Engineering Polytechnic of Bari
e-mail: vito.puliafito@poliba.it
Tel.: +39 080 596 3017

CNR Nanotec of Lecce
Via Monteroni 73100, Lecce, Italy

June 30, 2023

To Whom It May Concern:

I met Mr. Angelantonio Squicciarini at CNR Nanotec in Lecce in 2021 where I followed him in a 6-month internship.

In the first months of the internship, Angelantonio worked with FDM and DLP 3D printers and he was able to use equipment in perfect autonomy, fabricating device for cell analysis.

In this first part I was able to notice an excellent knowledge of CAD programs.

In the second part of the internship, he focused on the design, simulation and realization of inertial microfluidic devices for cell separation.

He studied the literature of microfluidic devices and he was able to use fluid dynamics simulation software, write codes in C language showing an excellent theoretical and practical knowledge of CFD and programming language.

He realized devices using a micro milling system in an independent way finding optimal solutions using CAM software.

I can confirm that Mr. Angelantonio Squicciarini adapts very well to any circumstance, bringing excellent results in a short time and he is the suitable candidate to continue his studies with a PhD.

For more information, do not hesitate to contact me.

Sincerely,

Francesco Ferrara
Researcher
CNR Nanotec - Institute of Nanotechnology
francesco.ferrara@nanotec.cnr.it

Institut des Sciences de la Terre d'Orléans
ISTO
UMR 7327
Sophie Roman
sophie.roman@univ-orleans.fr
+332 38 25 50 26

Orléans (France)
June 20, 2023

To whom it may concern,

I am writing to certify that Angelantonio Squicciarini is a PhD student at the University of Orléans (France) working at the Institute of Earth Science of Orleans under the supervision of Dr. Cyprien Soulaine and myself. M. Squicciarini started is PhD in January 2023, he is working on developing a numerical model for the transport of colloids by diffusiophoresis in porous media;
So far, M. Squicciarini showed great motivation, he is hardworking and has a strong background in mathematics and physics. We are very satisfied with the work he provides and are looking forward for the first outcomes of his research.

I will be happy to discuss with you by phone or email if needed.

Sincerely,

Sophie Roman