Gianluca Santesarti

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Work: via Eudossiana, 18, 00184 Rome (Italy)

RESEARCH INTERESTS

[01/12/2019 - Current]

Research interests

Bioengineering, Fluid Dynamics, Fluid-Structure Interaction (FSI), non-Newtonian fluids, Computational methods, Quasi-Analytical methods, Optimization procedures.

EDUCATION AND TRAINING

Ph. D. degree (evaluation "excellent quality") in civil engineering

University of Rome Tor Vergata [01/11/2019 - 04/07/2023]

City: Rome | **Country:** Italy | **Website:** https://web.uniroma2.it/ | **Thesis:** "Modelling of extrusion-based bioprinting via quasi-analytical and FSI computational approaches".

Advisors: G. Vairo, R. Verzicco, M. Marino, F. Viola. Ph.D. committee: G. Pedrizzetti, M. Conti, A. Gizzi. Defence date: July 4th, 2023.

State examination for engineering licence

University of Bologna [01/06/2019 - 01/07/2019]

City: Bologna | **Country:** Italy | **Website:** https://www.unibo.it/it

Section A, industrial area, nuclear sector, Bologna.

Master's degree (110/110 cum laude) in energy engineering

University of Bologna [01/09/2016 - 15/03/2019]

City: Bologna | **Country:** Italy | **Website:** https://www.unibo.it/it | **Thesis:** "A multiscale approach for Fluid-Structure Interaction problems with FEM simulations".

Advisors: S. Manservisi, R. Scardovelli, A. Chierici, L. Chirco. Numerical thesis performed at the Dept. of Nuclear Engineering. GPA: 29.7/30.

Bachelor's degree (110/110 cum laude) in energy engineering

University of Rome Tor Vergata [01/10/2011 - 28/04/2016]

City: Rome | **Country:** Italy | **Website:** https://web.uniroma2.it/ | **Thesis:** "Cruise control for electric vehicles with adaptive reference generation for engine speed. Stability test and experimental results".

Advisors: C. M. Verrelli, S. Bifaretti, M. Tiberti. In partnership with National Instruments and submitted to the "NI Student Design Competition 2016".

High school diploma

Liceo Scientifico D. Alighieri [01/09/2006 - 01/07/2011]

City: Fiuggi | **Country:** Italy | **Website:** https://www.iisanagni.it/

RESEARCH EXPERIENCES

[01/03/2024 - Current]

Postdoc fellow

Nanoscale modelling of human bone tissue. Dept. of Mechanical and Aerospace Engineering, Sapienza University of Rome.

PUBLICATIONS

[2022]

Models and simulations as enabling technologies for bioprinting process design.

Conti, M., Santesarti, G., Scocozza F. & Marino M. (2022). In: Bioprinting (pp. 137–206). Academic Press.

[2021]

Enabling Technologies for Obtaining Desired Stiffness Gradients in GelMA Hydrogels Constructs.

Sauty, B., Santesarti, G., Fleischhammer, T., Lindner, P., Lavrentieva, A., Pepelanova, I. & Marino, M. (2021) Macromolecular Chemistry and Physics, 223(2), p. 2100326.

[2021]

Computer-Aided Design for Biofabrication: basic procedures and open challenges.

Marino, M., Scocozza F., Santesarti, G. & Conti, M. (2021). In: Biofabrication: an integrated bioengineering approach for the automated fabrication of biological structures for clinical and research applications (pp. 133–154). Pàtron editore.

[2020]

A multiscale fluid structure interaction model derived from Koiter shell equations.

Chierici, A., Chirco, L., Giovacchini, V., Manservisi, S. & Santesarti, G. (2020). Journal of Physics: Conference Series. 159(1), p. 012040. IOP Publishing.

Conferences

ESB–ITA 2023, Torino, Italy, September 18–19; GIMC SIMAI YOUNG 2022, Pavia, Italy, September 29–30; World Biofabrication 2022 (ISBF), Pisa, Italy, September 25–28; AIMETA 2022, Palermo, Italy, September 4–8; ESMC 2022, Galway, Ireland, July 4–8; ESB 2022, Porto, Portugal, June 26–29; World TERMIS 2021, Maastricht, Netherlands, November 15–19; ESB 2021, Milan, Italy, July 11–14.

Acknowledgements

Paper acknowledgement in: Antonelli, D., Pasquale, L., Salvatore, A., Tiberti, M. & Verrelli, C.M. (2018). Electric Vehicles under Slip Constraints: Experimental Results. In 2018 AEIT International Annual Conference (pp. 1–6). IEEE.

TEACHING

[01/12/2019 – Current]
Teaching assistant for the Solid Mechanics course

Teaching assistant for the Solid Mechanics course of Mechanical Eng. Energy Eng., Civil Eng. and Medical Eng., course lecturers: G. Vairo, M. Marino.

[01/03/2022 – 01/06/2022]
MATLAB software

Course on MATLAB software for Environment Eng. and Civil Eng. master degree. 30 teaching hours (3 ECTS).

[01/03/2021 – 01/09/2021]
Thesis co-advisor

Thesis co-advisor of a master degree student, in collaboration with the Dept. of Industrial Eng. and the Dept. of Biology. Thesis advisors: G. Vairo, M. Marino, G. Santesarti.

[01/06/2020 – 01/01/2021]
Co-tutor

Co-teacher with S. Noce of "Basic Mathematics AY 2020/2021" tutoring course of Engineering Sciences international degree; class preparation, student support, online surveys (Doodle, SurveyMonkey, MS Forms).

[01/03/2020 – 01/09/2020]
Tutor

Tutor for an international internship of a ENS-Paris-Saclay student, in collaboration with Leibniz university of Hannover. Internship advisor: M. Marino.

ORGANIZATION

[01/10/2021 – Current]
ESB Student Committee

Support for student activities organization of the European Society of Biomechanics: scientific webinars, annual conference events, social media maintenance (Twitter, LinkedIn, Instagram).

[29/09/2022 – 30/09/2022]
Minisymposium

Co-organizer with F. Scocozza of MS "Computational models as enabling technologies for (bio)printing design and tissue engineering applications". GIMC-SIMAI YOUNG 2022 Workshop sponsored by ECCOMAS (EYIC)

[01/07/2021 – 01/01/2022]
Tutoring manager

Co-manager with S. Cesaroni of basic maths tutoring group of Eng. Sciences international degree. Tutors support, lecture schedule, info guides, back office emails. University of Rome Tor Vergata, Dept. of Industrial Eng., advisor: M. Chinappi.

WORK EXPERIENCE

Software analyst inside R&D

Automobili Lamborghini [15/06/2019 – 15/12/2019]

City: Sant'Agata Bolognese | **Country:** Italy

Internship at Whole Vehicle Department, CAE software implementation

Ferrari - F-Factor: The Ferrari Case Study

Ferrari [20/05/2019 – 20/05/2019]

City: Rome | **Country:** Italy

Case study at the University of Rome Tor Vergata, teamwork on the proposed case and member of the winner team

Fluid dynamics simulations at nuclear eng. laboratory of Montecuccolino

University of Bologna [01/11/2018 - 01/12/2018]

City: Bologna | **Country:** Italy

Internship on fluid dynamics simulations with open-source finite-element software "FEMuS". Internship advisor: S. Manservisi.

Industrial chemistry library assistant

University of Bologna [01/12/2017 - 01/02/2018]

City: Bologna | **Country:** Italy

Part-time work, user assistance and archival work

NETWORKS AND MEMBERSHIPS

Memberships

ESB (2020-present), EUROMECH (2021-present), AIMETA (2021-present), GNFM(2020-present), SIMAI (2022-present), TERMIS (2021-2022) & GNB (2021-2022)

COMPUTER SKILLS

Software

Fortran, MATLAB, C++ & Java. LabVIEW: software develop (CLAD level) & hardware myRIO for data acquisition and control. Parallel computing: open MPI. Linux OS: Xubuntu, Ubuntu, openSUSE. LaTeX. Microsoft Office: ECDL certificate. ParaView. SALOME, AutoCAD. ANSYS, Strand7 and Abaqus. THERMOFLEX.

SOFT SKILLS

Personal skills

Determination and perseverance; organization and teamwork; developed learning and organizing informations skills; critical thinking; problem solving.

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

German

LISTENING A1 **READING** A1 **WRITING** A1

SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

Spanish

LISTENING A1 **READING** A1 **WRITING** A1

SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

French

LISTENING A2 **READING** A2 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

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

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Rome, 18/01/2025