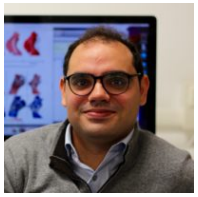

Michele Conti

Curriculum Vitæ

(last update: April 2024)

1 Personal data

- Affiliation (1): Department of Civil Engineering and Architecture - structural division, Università degli Studi di Pavia, via Ferrata 3, 27100 Pavia (PV), IT
- Affiliation (2): UOR Laboratorio di Simulazione Computazionale e 3D, IRCCS Policlinico San Donato, Piazza Edmondo Malan, 2, 20097 San Donato Milanese (MI), IT
- Office phone number: (+39)0382-985455
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- E-mail: michele.conti@unipv.it
- Web-page: http://www.unipv.it/compmech/members/micheleconti.html
- Research ID: http://www.researcherid.com/rid/J-3580-2014
- Scopus: https://www.scopus.com/authid/detail.uri?authorId=26427976600
- Orcid: https://orcid.org/0000-0003-1275-0653

2 Studies and career

Studies:

- *September 2001 - November 2004*: **Bachelor degree in Biomedical engineering** at Università degli Studi di Pavia.
- *September 2004 - July 2007*: **Master Degree in Biomedical engineering** at Università degli Studi di Pavia.
- *November 2007 - November 2010 (Graduation 11/02/2011)*: **PhD in Bioengineering and Bioinformatics** at Università degli Studi di Pavia - (Joint diploma with Ghent University, Ghent, Belgium).

Accademic position

- *June 2023*: **National Scientific Qualification** as Full Professor in Industrial Bioengineering (ING-IND/34)
- *December 2019 - currenty*: **Associate Professor** - at Department of Civil Engineering and Architecture (ex Dept. of Structural Mechanics), Università degli Studi di Pavia, Pavia.
- *November 2016 - November 2019*: **Assistant Professor - RTD-B** - at Department of Civil Engineering and Architecture (ex Dept. of Structural Mechanics), Università degli Studi di Pavia, Pavia.
- *April 2017*: **National Scientific Qualification** as Associate Professor in Industrial Bioengineering (ING-IND/34)
- *November 2012 - October 2016*: **Assistant Professor - RTD-A** - at Department of Civil Engineering and Architecture (ex Dept. of Structural Mechanics), Università degli Studi di Pavia, Pavia.
- *November 2010 - October 2012*: **Post-doc fellow** at Department of Civil Engineering and Architecture (ex Dept. of Structural Mechanics), Università degli Studi di Pavia, Pavia.

Awards and Honours

- *Nov 2024-currently.* Recipient of ERC CoG 2023 - (ID: 101125466)
- *July 2020-currently.* Council Member of European Society of Biomechanics (ESB).

- *2021-currently*. Treasurer of the Italian Group of Bioengineering (GNB).
- *June 2019*. Recipient of research grant by LivaNova Donations & Grants. [http://www-2.unipv.it/compmech/cardiac-surgery.html]
- *April 2016*. Winner of European Society of Cardiology (ESC) Research Grant. [https://www.escardio.org/Research/Research-Funding/ESC-research-grants] suppoting emboflow project (see related article [https://www.ncbi.nlm.nih.gov/pubmed/30341729])
- *December 2014*. Winner of E. Kieffer Prize for the study 'Impact of TEVAR on thoracic Aortic Elasticity'. 6th International Congress Aortic Surgery and Anesthesia *How to do it*, Milan, Dec. 11-13, 2014.
- *2013-2015*. President of Italian Chapter of European Society of Biomechanics (ESB-ITA) [http://www.esb-ita.it/main/info/executive-board/].
- *2010*. PhD thesis selected as the Italian candidate for the ECCOMAS (European Community on Computational Methods in Applied Sciences) Award for the Best PhD Theses 2010.

Teaching experience

- *2022-currently*: **Professor** for **Stampa 3d Per Applicazioni Medico-Chirurgiche - An introduction of bioprinting** - Medicine Enhanced by Engineering Technology - University of Pavia/ Italy. 1 CFU.
- *2018-currently*: **Professor** for **Fluidodinamica applicata - Biomacchine** course held at the Faculty of Engineering of Università degli Studi di Pavia (I year master degree in Bioengineering). 9 CFU.
- *2014-currently*: **Professor** for **Biomeccanica e simulazione di dispositivi biomedici** course held with Prof. F. Auricchio at the Faculty of Engineering of Universitàdegli Studi di Pavia (II year bachelor degree in Bioengineering). 3 CFU.
- *2014-currently*: **Professor** for **Modelli Costitutivi dei materiali** course held at the Faculty of Engineering of Universitàdegli Studi di Pavia (I year bachelor degree in Bioengineering). 2 CFU.
- *Years: 2008 / 2010 / 2011/ 2012 / 2013*: **Tutor** for **Biomechanics** course held by Prof. F. Auricchio at the Faculty of Engineering of Università degli Studi di Pavia.
- *Years: 2009-2010 / 2013-2014-currently*: **Tutor** for **Mechanics of Biological Materials** held by Prof. F. Auricchio at the Faculty of Engineering of Università degli Studi di Pavia.
- *15/05/2017 - currently* [Member of PhD committee]: Università degli Studi di PAVIA - TECNOLOGIE PER LA SALUTE, BIOINGEGNERIA E BIOINFORMATICA.
- *15/03/2016 - currently* [Member of PhD committee]: Università degli Studi di PAVIA - INGEGNERIA CIVILE E ARCHITETTURA - Ciclo: XXXII.
- *09/04/2015 - 30/05/2018* [Member of PhD committee]: Università degli Studi di PAVIA - INGEGNERIA CIVILE E ARCHITETTURA - Ciclo: XXXI.
- *12/05/2014 - 30/05/2017* [Member of PhD committee]: Università degli Studi di PAVIA - INGEGNERIA CIVILE E ARCHITETTURA - Ciclo: XXX.
- *14/09/2013 - 30/09/2016* [Member of PhD committee]: I.U.S.S. - Istituto Universitario di Studi Superiori - PAVIA - *MECCANICA COMPUTAZIONALE E MATERIALI AVANZATI*

PhD students

- *2023-currently* PhD advisor. Student: Serena Anglese. Biomechanics of Structural Valve Degeneration (ciclo XXXIX).
- *2023-currently* PhD advisor. Student: Martina Schembri. In-vitro biomechanical testing (ciclo XXXIX).
- *2023-currently* PhD advisor. Student: Alessandro Ruggeri. ECMO fluid-dynamics (ciclo XXXIX).
- *2023-currently* PhD co-advisor. Student: Marco Magliocco. AI for the analysis of CT-scan for aortic biomechanics (University of Genoa).

- *2023-currently* PhD co-advisor. Student: Luca Battaglia. 3D printing for aortic endografting (University of Genoa).
- *2022-currently* PhD advisor. Student: Marco Bellotti. Digital smart fluidics for nanoparticles' manufacturing (ciclo XXXVIII).
- *2020-currently* PhD advisor. Student: Giulia Maria Di Gravina. Bioprinting for liver tissue (ciclo XXXVI).
- *2020-currently* PhD advisor. Student: Valentina Ceserani. Biomechanical modeling of AAOCA (ciclo XXXVI).
- *2020-currently* PhD advisor. Student: Giada Loi. Bioprinting and bioreactors for muscle tissue (ciclo XXXVII).
- *2019-2022* PhD advisor. Student: Franca Scocozza. Thesis Title: Design and assessment of a 3D Bio-printed hybrid scaffold for bone tissue engineering. PhD Program in Bioengineering and Bioinformatics (ciclo XXXV).
- *2018-2021* PhD (co)advisor. Student: Alice Fantazzini. Thesis Title: Deep Learning Techniques to Support Endovascular Surgical Procedures. PhD program in Biotecnologie in Medicina Traslazionale, University of Genoa.
- *2018-2021* PhD advisor. Student: Anna Ferrarini. Thesis Title: Multiscale Patient-Specific Computational Fluid Dynamics to Assess Thoracic Aortic Hemodynamics. PhD program in Design, Modeling and Simulation in Engineering (ciclo XXXIV), University of Pavia.
- *2017-2020* PhD advisor. Student: Giovanni Maria Formato. Thesis Title: Carotid artery and stenting: from geometrical analysis to computational haemodynamics. PhD Program in Bioengineering and Bioinformatics (ciclo XXXIII).

Organization of Workshops, Scientific meetings, Schools - recent/selected

- ESB 2025 Congress - 30th Congress of the European Society of Biomechanics - 6/7-9/7/2025, Edinburgh, Scotland. Website: https://esbiomech2025.org. Member of the local organizing committee as Chair of Meetings and External Affairs.
- The fourth ECCOMAS thematic conference on Biomedical Technology - ICBT23 (Hannover, Germany, 6-8/11/2023). Mini-symposium entitled Enabling technologies for tissue engineering: materials, experiments, and simulations. Silvia Budday, Michele Conti and Michele Marino.
- ESB 2024 Congress - 29th Congress of the European Society of Biomechanics - 30/06-3/7/2024, Edinburgh, Scotland. Website: https://esbiomech2024.org. Member of the local organizing committee as Chair of Meetings and External Affairs.
- III Winter School 'Bioprinting From printing set-up to laboratory analysis and Biomechanics'. Pavia, Italy, February 2024. Website: http://bioprintingwinterschool.unipv.it
- International Summer School 'Additive manufacturing in healthcare: from 3d printing to bioprinting'. Como, Italy, June 2023. Website: https://3dp.lakecomoschool.org
- II Winter School 'Bioprinting From printing set-up to laboratory analysis and Biomechanics'. Pavia, Italy, February 2022. Website: http://bioprintingwinterschool.unipv.it
- I Winter School 'Bioprinting From printing set-up to laboratory analysis and Biomechanics'. Pavia, Italy, 11-13/02/2020. Website: http://bioprintingwinterschool.unipv.it
- Thematic workshops - 2018-2020 - *Bioprinting from 3D printing set-up to laboratory analysis* http://www-2.unipv.it/compmech/bioprinting/meetings_events.html
- '3D printing and Biomechanics' 2^o Congresso IDBN - Italian Digital Biomanufacturing Network & III Thematic Conference ESB-ITA - European Society of Biomechanics-ITA (Pavia, Italy, 5-7/09/2018). National conference, member of the local organising committee: F. Auricchio, MC, S. Marconi. Website: http://www-2.unipv.it/compmech/idbn_home.html

3 Participation in research projects as PI/Unit Leader

- [PI] *October 2024-2029*: *Analisi multimodale dell?azione biomeccanica sullo sviluppo e progressione dell'aterosclerosi vascolare*, 5x1000 GSD. Funding: 131.000 Euros.

- [Unit Leader] *2024-2026*: *Speed-up the diagnosis and evaluation of anoMalous coronary ARTery - SMART*, PNNR-POC. 212.000 Euros.
- [PI] *2024-2025*. Premialitá ERC UniPV. Funding: 125.000,00 Euros.
- [PI] *October 2024-2029*: *Redesigning aortic endograft: enabling in-situ personalized aneurysm healing-EPEIUS*, ERC CoG 2023. Funding: 1.991.225,00 Euros.
- [Unit Leader] *October 2022-currently*: *NAD simulation*, Project Trustinageing funded by Ministero della Salute, coordinator: Prof. M. Schmid. Funding: 40000 Euros.
- [Unit Leader] *October 2022-currently*: *Bioprinting ELM-based biosensors*, PNNR NODES. Funding: 60000 Euros.
- [Unit Leader] *October 2020- currently*: *New patient-specific functional assessment of the anomalous aortic origin of coronary arteries: stratifying the risk for myocardial ischemia and sudden death.*, Ricerca finalizzata 2019 - Ministero della Salute, coordinator: Dr. M. Lo Rito. Unit funding: 62500 Euros.
- [Unit Leader] *Apr 2019- currently*: *Impact of peripheral endovascular repair on femoral-popliteal artery kinematic: from clinical experience to in vivo biomechanical modeling (PERFEKT study)*, Ricerca finalizzata 2018 - Ministero della Salute, coordinator: Dr. B. Pane. Webpage: http://www-2.unipv.it/compmech/perfekt.html. Unit funding: 43200 Euros.
- [Unit Leader] *November 2015 - 2022*: *Impact of carotid endarterectomy and stenting on hemodynamics, fluid-structure interaction, autonomic modulation, and cognitive brain function*, Ricerca finalizzata 2013 - Ministero della Salute, coordinator: Dr. M. Marrocco. Webpage: http://www-2.unipv.it/compmech/barox.html. Unit funding: 62000 Euros.
- [Unit Leader] *February 2018 - 2022*: *Cryoballoon atrial fibrillation ablation: in vivo evaluation of tissue effects and predictors of durable lesions*, Ricerca finalizzata 2016 - Ministero della Salute, coordinator: Dr. M. Anselmino. Webpage: http://www-2.unipv.it/compmech/cryoballoon.html. Unit funding: 26450 Euros.
- [PI] *February 2018 - currently*: *Emboflow: Prevention of intraprocedural stroke through flow modulation*, ESC research grant. Webpage: https://compmech.unipv.it/projects/completed-projects/emboflow-prevention-of-intraprocedural-stroke-through-flow-modulation/. Unit funding: 25000 Euros.
- [PI] *2019-2020*: *In-vitro model of extra-circulatory system*, Livanova Donation and grant. Webpage: https://compmech.unipv.it/projects/ongoing-projects/cardiac-surgery-project/. Unit funding: 40000 Euros.

4 Research activity

Abroad research period

- *September 2015*: Institute: UMCU (University Medical Center Utrecht), Utrecht, NL; topic: Aortic Biomechanics (Erasmus Plus Grant).
- *February 2013*: Institute: UCSD (University of California at San Diego), San Diego, USA; topic: Computational fluid-dynamics of carotid arteries.
- *September 2011*: Institute: KAUST (King Abdullah University of Science and Technology), Thuwal, South Arabia; topic: generation of multi-patch domains for patient-specific iso-geometric analysis.
- *from June 2006 to September (periodically)*: Institute: IBiTech (Institute Biomedical Technology), Ghent University, Ghent, Belgium; topic: numerical simulation of carotid stenting.

Editorial activity

- **Reviewer** of several scientific peer-review journals. Among them: Journal of Biomechanics, Medical Engineering & Physics (MEP), Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), IEEE-Transactions on Biomedical Engineering (TBME), Journal of Endovascular Therapy (JEVT), International Journal for Numerical Methods in Biomedical Engineering, Annals of Biomedical Engineering (ABME), BioMedical Engineering OnLine, Cardiovascular Engineering and Technology (CVET), International Journal of Artificial Organs (IJAO), Computer Methods in Applied Mechanics and Engineering (CMAME), PLOS ONE, Journal of

Material and Design (JMAD), Computers in Biology and Medicine (CBM), Journal of Biomechanical Engineering - ASME, Scientific Reports, Journal of Clinical Medicine.

- **Associate Editor** of International Journal of Artificial Organs for *Focus Issue 3D printing for biomedical applications*.
- **Editor** of the book Bioprinting - From Multidisciplinary Design to Emerging Opportunities - Editors: Michele Conti, Michele Marino - ISBN: 9780323854306 https://www.elsevier.com/books/bioprinting/conti/978-0-323-85430-6

Main research interests

- **Numerical simulation of minimally-invasive cardiovascular devices**.
- **Experimental set-up for in-vitro tests of endovascular devices**. See http://www.unipv.it/compmech/beta-lab.html
- **3D (bio)printing/additive manufacturing for biomedical applications**. See https://bioprinting.unipv.it.
- **Development of informatics tools for medical imaging analysis**.

5 Scientific/scholarly publications

Publication resume - Scopus

- Search criterion: AU-ID ("Conti, Michele" 26427976600)
- From 2009 to 01/11/2023
- Peer-review Papers [international]: 95
- Sum of the Times Cited: 1825
- h-index: 25

Journal Articles

- recent and selected

1. Bari, E., Gravina, D., Maria, G., Scocozza, F., Perteghella, S., Frongia, B., ... & **Conti M.** (2023). Silk Fibroin Bioink for 3D Printing in Tissue Regeneration: Controlled Release of MSC extracellular Vesicles. Pharmaceutics, 15(2), 383.
2. Usai, F., Loi, G., Scocozza, F., Bellato, M., Castagliuolo, I., **Conti M.***, & Pasotti, L.* (2023). Design and biofabrication of bacterial living materials with robust and multiplexed biosensing capabilities. Materials Today Bio, 18, 100526. *shared co-last authorship.
3. Bianchi, D.*, **Conti M.***, Bissacco, D., Domanin, M., Trimarchi, S., & Auricchio, F. (2022). Impact of thoracic endovascular aortic repair on aortic biomechanics: Integration of in silico and ex vivo analysis using porcine model. International Journal for Numerical Methods in Biomedical Engineering, e3594. *shared co-first autorship.
4. Ronzoni, F. L., Aliberti, F., Scocozza, F., Benedetti, L., Auricchio, F., Sampaolesi, M., ... & **Conti M.** (2022). Myoblast 3D bioprinting to burst in vitro skeletal muscle differentiation. Journal of Tissue Engineering and Regenerative Medicine, 16(5), 484-495. IF. 3.963. Cit. 8.
5. Brutti, F., Fantazzini, A., Finotello, A., Muller, L. O., Auricchio, F., Pane, B., ... & **Conti M.** (2022). Deep learning to automatically segment and analyze abdominal aortic aneurysm from computed tomography angiography. Cardiovascular Engineering and Technology, 1-13.
6. **Conti M.**, Ferrarini, A., Finotello, A., Salsano, G., Auricchio, F., Palombo, D., ... & Pane, B. (2020). Patient-specific computational fluid dynamics of femoro-popliteal stent-graft thrombosis. Medical Engineering & Physics, 86, 57-64. IF. 2.242. Cit. 7.
7. Bari, E., Scocozza, F., Perteghella, S., Sorlini, M., Auricchio, F., Torre, M. L., & **Conti M.** (2021). 3D bioprinted scaffolds containing mesenchymal stem/stromal lyosecretome: next generation controlled release device for bone regenerative medicine. Pharmaceutics, 13(4), 515.

8. **Conti M.**, Ferrarini A., Finotello A., Salsano G., Auricchio F., Palombo D., Spinella G., Pane B. (2020) *Patient-specific computational fluid dynamics of femoro-popliteal stent-graft thrombosis.* Medical Engineering & Physics, 86, 57-64.

9. **Conti M.**, Romarowski R. M., Ferrarini A., Stochino M., Auricchio F., Morganti S., von Segesser L. K., Ferrari E. (2021) *PATIENT-SPECIFIC COMPUTATIONAL FLUID DYNAMICS ANALYSIS OF TRANSCATHETER AORTIC ROOT REPLACEMENT WITH CHIMNEY CORONARY GRAFTS.* Interactive cardiovascular and thoracic surgery, 32(3), 408-416.

10. Lo Rito, M., Romarowski, R.M., Rosato, A., Pica, S., Secchi, F., Giamberti, A., Auricchio, F., Frigiola, A., **Conti, M.** (2021). *Anomalous Aortic Origin of Coronary Artery Biomechanical Modeling: Toward Clinical Application.*The Journal of Thoracic and Cardiovascular Surgery, 161(1), 191-201.

11. Fantazzini, A., Espostito, M., Finotello, A., Auricchio, F., Basso, C., Spinella, G., **Conti, M.** (2020). *3D Automatic Segmentation of Aortic Computed Tomography Angiography Combining Multi-View 2D Convolutional Neural Networks.* Cardiovascular engineering and technology, 11(5), 576-586.

12. **Conti, M.**, & Marconi, S. (2019). Three-dimensional printing for biomedical applications (Editorial). The International Journal of Artificial Organs 2019, Vol. 42(10) 537-538

13. G. Spinella, A. Finotello, B. Pane, G. Salsano, S. Mambrini, A. Kamenskiy, V. Gazzola, G. Cittadini, F. Auricchio, D. Palombo, **M. Conti**. *In Vivo Morphological Changes of the Femoropopliteal Arteries due to Knee Flexion After Endovascular Treatment of Popliteal Aneurysm.* Journal of Endovascular Therapy, 2019.

14. **M. Conti**, S. Marconi, G. Muscogiuri, M. Guglielmo, A. Baggiano, G. Italiano, F. Auricchio, D. Andreini, M. G. Rabbat, A. I. Guaricci, G. Fassini, A. Gasparetti, F. Costa, C. Tondo, A. Maltagliati, M. Pepi, G. Pontone. *Left atrial appendage closure guided by 3D computed tomography printing technology: a case control study.* Accepted for publication in Journal of Cardiovascular Computed Tomography.

15. **M. Conti**, S. Vanderberghe, S. Marconi, E. Ferrari, F. Auricchio, S. Demertzis. *Reversed auxilliary flow to reduce embolism risk during TAVI: a computational simulation and experimental study, to Cardiovascular.* Cardiovascular Engineering and Technology, 10(1), 124-135.

16. G.M. Formato, M. Lo Rito, F. Auricchio, A. Frigiola, **M. Conti**. *Aortic Expansion Induces Lumen Narrowing in Anomalous Coronary Arteries: A Parametric Structural Finite Element Analysis.* J Biomech Eng. 2018;140(11):111008-111008-9. doi:10.1115/1.4040941.

6 Invited seminars/talks

- recent and selected

1. *3D printing in the hospital.* INSIGHT into aortic diseases. 4th edition. Milan (IT), 15 Marzo, 2024.

2. *3D International Symposium in Biomechanics in vascular Biology and Cardiovascular Disease.* Guest speaker. Rotterdam, May 2024 www.shearstresssymposium.nl.

3. *3D BIOPRINTED SCAFFOLD WITH CONTROLLED RELEASE OF MESENCHYMAL STEM SECRETOME FOR BONE REGENERATION.* Perspective talk. ESB 23. Maastricht, NL, July, 2023.

4. *Popliteal stenting biomechanics.* Meeting of European Society of Vascular Biomechanics. Strasbourg (FR), April, 2023.

5. *Mechanical coupling.* INSIGHT into aortic diseases. 3rd edition. Milan (IT), 17-18 Marzo, 2022.

6. *L'analisi fluido-dinamica (CFD) nella patologia dell'arteria poplitea.* National congress of Società Italiana di Chirurgia Vascolare ed endovascolare (SICVE). Florence (IT), 17-19, October, 2019.

7. *Effectiveness of 3D printed models in the treatment of complex aortic diseases.* 11^{th} meeting of European Society of Vascular Biomechanics. Strasbourg (FR), 17-19, October, 2019.

8. *Prototipazione rapida da immagini per una medicina personalizzata.* GRUPPO NAZIONALE DI BIOINGEGNERIA - XXXVII Scuola Annuale, Bressanone (IT), September, 2019)

9. *Biomechanical simulations and 3D printing for endovascular device testing.* 2° Annual Meeting 3Rs in Italian Universities. 20-21 June 2019, Genoa, IT.

10. *Material testing and mechanical modelling in bioprinting.* THE EUROPEAN CELLINK COLLABORATIVE PARTNERSHIP CONFERENCE (10 May 2019, Milan, Italy).

7 Others

- co-founder of P4P srl (https://www.registroaziendecommerciali.com/settore/p4p-srl-101389)
- Method for simulating coronary variations and/or for assessing the risk of myocardial ischemia. Inventors. Italian patent granted (n. 102020000012031). PCT filled (PCT/IB2021/054361). Conti, M. role: inventor.
- Scaffold for tissue regeneration, particularly for bone regeneration, and manufacturing method thereof. PCT patent pending application (n. PCT/IB2022/052098). Conti, M. role: inventor. Date of Receipt: 09/03/2022.

8 Languages and computer knowledge

Languages:

- Italian (mother language).
- English (oral: excellent, written: excellent).
- Certification: Preliminary English Test (PET)-May 2003.

Computer knowledge:

- *Operative systems*: Windows, Linux.
- *Programming languages*: Python, Java, JSP, MATLAB, SQL, HTML.
- *Softwares*: LaTeX, MS Office, finite element solvers (FEAP, ABAQUS, ANSYS etc.).

I hereby certify that the information given in my Curriculum Vitae is correct and complete to the best of my knowledge and understand that any misleading statements, failure to disclose information or deliberate omissions will be regarded as grounds for withdrawal of offer or subsequent disciplinary action which may result in dismissal.