Emanuele Gasparotti

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Current Position

2016 – present

- **BioCardioLab, Fondazione Toscana Gabriele Monasterio, Italy** - Research engineer
  - Novel cardiovascular implants simulation and testing
  - Numerical computation for structural, fluid dynamics and fluid-structure interaction simulations in the cardiovascular field
  - Additive manufacturing for biomedical applications
  - Experimental setup design of in-vitro tests of endovascular devices
  - Experimental setup design for soft tissues opto-mechanical characterization
  - Biological/cardiovascular tissue mechanical modeling and characterization

Current Projects

2023 –

- Contribution to the **PLAcE - An integrated pipeline for planning of Percutaneous Left Atrial Appendage Occlusion based on 3D printed and in-silico models** project by fulfilling the following tasks:
  - Development of mock circulatory loop for evaluation of Left atrial appendage closure procedure
  - Development of PIV system for the characterization Left atrial appendage fluid dynamics
  - 3D printing manufacturing of simulator for the training of Left atrial appendage closure procedure

- Consultant for **Edwards Lifescience company** for the design and development of cardiovascular simulator for the training of the mitral valve in valve replacement procedure

2022 –

- Consultant for **Sintac (GPI) company** for finite element simulations of orthopaedic and maxillofacial prostheses

- Contribution to the **Repair - H2020 - Restoring cardiac mechanical function by polymeric artificial muscular tissue** project by fulfilling the following tasks:
  Development of fluid dynamic setup for evaluation of cardiovascular contractile LED based patches cardiovascular tissue

2020 –

- Contribution to the **MEDITATE - H2020 - Medical Digital Twin for Aneurysm Prevention and Treatment** project by fulfilling the following tasks:
  - Development of mock circulatory loop for evaluation of cardiovascular vessels
  - Development of PIV system for the characterization vessels fluid dynamics
  - 3D printing manufacturing of heart structures models
  - Development of mechanical / microstructural setup for evaluation of cardiovascular tissue

Current Position (continued)

Acheived Projects

2021 – 2024 — Winner of the competitive selection for the **My Breathing Heart - (Development of a smartphone application for remote monitoring of breathing kinematics during a pandemic crisis)** project as a Research engineer
- Cinematic tracking of the human chest during breathing
- Development of human breathing in-vitro simulator

2019 – 2023 — Winner of the competitive selection for the **3D VIRTUAL BABY HEART - (to design an engineering workflow based on 3D Printing techniques and Virtual and Mixed Reality environment for supporting physical pre-operative planning** project as a Research engineer
- Cad model designing of heart structures
- 3D printing manufacturing of heart structures models for the pre-operative planning

2019 – 2020 — Contribution to the **4R Tender - (Reviews on Non-animal Methods in Use for Biomedical Research)** project
- Investigation of non-animal methods for the research in the cardiovascular field
- Evaluation of engineering techniques for the replacement of animal experimentation

2017 – 2020 — Contribution to the **DIVINE - (High-speed 3D-imaging of blood vessels based on optical signal processing)** project by fulfilling the following tasks:
- Development of mechanical / microstructural setup for evaluation of cardiovascular tissues

2017 – 2019 — Contribution to the **VIVIR - (Virtual and Augmented Reality Support for Transcatheter Valve Implantation by using Cardiovascular MRI)** project by fulfilling the following tasks:
- 3D printing manufacturing of heart structures models
- Development of fluid dynamic setup for evaluation of cardiovascular devices

2016 – 2019 — Winner of the competitive selection for the **Valvetech - (Realization of a polymer aortic valve of new conception and implantable through robotic platform with minimally invasive surgery techniques)** project as a Research engineer
- Development of an hydraulic piston pulsatile pump able to reproduce the physiological cardiac flows
- Hydrodynamic and mechanical testing of developed heart valve materials and aortic root tissues
- Designing of tensile machine was then updated with laser system to fully characterize the mechanical properties of soft tissues

Work Experiences

Jul 2015 – Dec 2015 — **Leonardo s.p.a, Italy** - Intern at Defence System div.
- Numerical simulations of composite laminate
- Composite designing of the Hitfist® tank turret
- Dynamical ballistic analysis of the turret panels to evaluate the performance of the tank protection

Education

2018 – 2022 **Ph.D. Biomedical Engineering, University of Pisa, italy.**
Thesis title: *Modelling and numerical simulations of the Cardioband procedure for mitral valve regurgitation repair*.
Supervisors: Prof. Luigi Landini, Prof.Giovanni Vozzi, Prof. Simona Celi (s.celi@ftgm.it)

2016 **Government exam and license for Mechanical Engineer profession.**

2012 – 2015 **M.Sc. Mechanical engineering, University of Pisa, italy.**
Thesis title: *Feasibility study of a composite hull for tank turret*.
Supervisors: Prof. Marco Beghini, Eng. Paolo Arrighi

2008 – 2012 **B.Sc. Mechanical engineering, University of Pisa, italy.**
Thesis title: *Study of the thermal compensation system for the absorber tube of a solar concentration implant*.
Supervisors: Prof. Roberto Gabbrielli

Miscellaneous Experience

Awards

2019 **First Prize "Best Oral presentation"**, "Biaxial and optomechanical characterization of soft tissues: a novel setup and experimental tests" ESB-ITA2019, October 30 – November 1, 2019, Bologna, Italy, co-author of the work.

First Prize "Best poster presentation"," In-silico assessment of thrombosis risk: a CFD study of left atrial and left atrial appendage" ESB-ITA2019, October 30 – November 1, 2019, Bologna, Italy, co-author of the work.

Finalist poster Award, "A novel FSI-RBF mesh morphing environment to design a new polymeric aortic valve" ,International CAE Conference, October 28 – 29, 2019, Vicenza, Italy, first presenter.

2018 **Winner of Best Poster Award**, "Digital twin in healthcare: development of an integrated imaging and finite element model of Cardioband® procedure for the treatment of mitral regurgitation", International CAE Conference, October 8 – 9, 2018, Vicenza, Italy, first presenter.

Miscellaneous Experience (continued)

Additional Research Activities

2018- **Supervisor for 17 Master theses in Biomedical Engineering** at University of Pisa.
- Effect of aortic morphology for ECMO investigation: a combined SSM and CFD study (2024)
- Design and fabrication of 3D printed deformable model of patient-specific left atrium for PIV investigation (2023)
- Design and set-up of a 3d printed left Heart flow simulator for the Simulation of the mitraclip procedure (2023)
- Mechanical properties of aortic tissue in vivo through the analysis of CT-ECG gated images (2023)
- Development and implementation of a combined CFD and mesh morphing technique for the thoracic aorta (2022)
- Simulation using finite volume techniques of fluid dynamics in patients undergoing extracorporeal circulation (2022)
- Computational Analysis of the parametric Left Atrial Appendage to study the risk of thrombus formation (2022)
- Caratterizzazione meccanica e funzionale dei materiali della stampante 3D Stratasys J750 Digital Anatomy per il settore vascolare (2021)
- Effects of the Cardioband procedure on the mitral valve (2021)
- Finite element numerical simulation of Cardioband® procedure for the treatment of mitral regurgitation (2021)
- Numerical simulation of ECMO procedure (2020)
- Development of a fast high fidelity FSI workflow to simulate polymeric aortic valves: a RBF mesh morphing study (2019)
- Development of an in silico and an in vitro workflow for the planning of cerebral aneurysms intervention: an integrated approach with echo-PIV and CFD (2019)
- Design and development of an experimental setup for the optomechanical characterization of vascular tissue (2019)
- Development of an experimental fluid dynamic setup for the evaluation of valve prosthesis (2018)
- Finite element simulation of left atrial appendage occlusion procedure (2018)
- Mock Cardiac Pump Compatible With Magnetic Resonance Imaging: Design, Simulation And Fabrication (2018)

2020 - **Supervisor for Master thesis in Aerospace Engineering** at University of Pisa.
- Mechanical characterisation of anisotropic materials Anisotropic hyperelastic materials by means of DIC Applied to biaxial tensile and bulge tests Test (2022)
- Emodinamica dell'aorta toracica: effetto delle condizioni di inlet su esperimenti e simulazioni (2020)
- Circulatory mock loop for thoracic aorta hemodynamics analysis: stochastic sensitivity to inlet conditions and comparison with numerical simulations results (2020)

2019-2021 **Lecturer** for the course "Principles for Diagnostic Methods" at faculty of Biomedical Engineering, University of Pisa.

2021 **Lecturer** for the LABS seminar held in Politecnico di Milano with the presentation "A computational fluid dynamics workflow for the assessment of thromboembolic risk in non-valvular atrial fibrillation patients".

Miscellaneous Experience (continued)

2018- **International Peer review journal activities**.
- Editorial board of Frontiers in Medical Technology
- American Society of Mechanical Engineers
- Computer Methods in Applied Mechanics and Engineering
- Journal of Biomechanics
- International Journal of Polymeric Materials and Polymeric Biomaterials
- Mathematical Biosciences and Engineering
- Journal of Cardiothoracic Surgery

Congress organization
- Member of the organizing committee for the **IV congress of the Italian Digital Biomanufacturing Network (IDBN2024)**, held in Florence in September 2024
- Member of the organizing committee for the seminar cycle and open day entitled **"My Breathing Heart: quanto è in forma il tuo respiro?"**, held in Pisa in February 2024
- Member of the organizing committee of the **"3D Virtual Baby Heart Congress"** held in Massa on the 17-18 November 2023
- Member of the organizing committee for the **Winter School 2023 "Big Data analytics from engineering to clinical"**
- Member of the organizing committee for the **XI Annual Meeting of the Italian Chapter of European Society of Biomechanics (ESB-ITA2022)**, held in Massa in October 2022

Skills

Technical skills

CAE	Ansys APDL, Ansys Mechanical, Ansys Fluent, Ansys LS-DYNA, Abaqus
Meshing	ANSA, ICEM, Meshmixer, Ansys Fluent WaterTight
CAD	Solidworks, SpaceClaim, ANSYS Modeling, Autocad, FreeCad, Fusion360, Inventor
3D printing	3Ntr SSI2023, Sinterit Advanced Studio, Formlabs Preform, Simplify3D
Programming	Matlab, Mathcad, Python
Other	Office, Gsuite, LateX

Personal skills

- High level in communication skills
- Sociable and proactive
- High level in problem solving skills

Languages

- Italian, Native
- English, Professional

Research Publications

Journal Articles

1 Danielli, F., Berti, F., Fanni, B. M., **Gasparotti, E.**, Celi, S., Pennati, G. & Petrini, L. (2024). Left atrial appendage occlusion: On the need of a numerical model to simulate the implant procedure. *International Journal for Numerical Methods in Biomedical Engineering*, e3814.

2 Garzia, S., Capellini, K., **Gasparotti**, **E.**, Pizzuto, D., Spinelli, G., Berti, S., Positano, V. & Celi, S. (2024). Three-dimensional multi-modality registration for orthopaedics and cardiovascular settings: State-of-the-art and clinical applications. *Sensors*, *24*(4), 1072.

3 Rizza, A., Castiglione, V., Capellini, K., Palmieri, C., **Gasparotti**, **E.**, Berti, S. & Celi, S. (2024). Case report: Role of numerical simulations in the management of acute aortic syndromes. *Frontiers in Cardiovascular Medicine*, *11*, 1309840.

4 Vignali, E., **Gasparotti**, **E.**, Miglior, L., Gervasi, V., Simone, L., Haxhiademi, D., Frediani, L., Borelli, G., Berti, S. & Celi, S. (2024). A new smartphone-based method for remote health monitoring: Assessment of respiratory kinematics. *Electronics*, *13*(6), 1132.

5 Antonuccio, M. N., **Gasparotti**, **E.**, Bardi, F., Monteleone, A., This, A., Rouet, L., Avril, S. & Celi, S. (2023). Fabrication of deformable patient-specific aaa models by material casting techniques. *Frontiers in Cardiovascular Medicine*, *10*.

6 Calò, K., Capellini, K., De Nisco, G., Mazzi, V., **Gasparotti**, **E.**, Gallo, D., Celi, S. & Morbiducci, U. (2023b). Impact of wall displacements on the large-scale flow coherence in ascending aorta. *Journal of Biomechanics*, *154*, 111620.

7 Celi, S., **Gasparotti**, **E.**, Capellini, K., Bardi, F., Scarpolini, M. A., Cavaliere, C., Cademartiri, F. & Vignali, E. (2023). An image-based approach for the estimation of arterial local stiffness in vivo. *Frontiers in Bioengineering and Biotechnology*, *11*, 1096196.

8 Fanni, B. M., **Gasparotti**, **E.**, Vignali, E., Capelli, C., Positano, V. & Celi, S. (2023). An integrated in-vitro and in-silico workflow to study the pulmonary bifurcation hemodynamics. *Computers & Fluids*, *260*, 105912.

9 **Gasparotti**, **E.**, Fanni, B. M., Del Pia, E., Capellini, K., Danielli, F., Berti, F., Clemente, A., Berti, S., Pennnati, G., Petrini, L. Et al. (2023). Computational fluid dynamic simulation to evaluate the device-related effects after left atrial appendage occlusion, 205–212.

10 **Gasparotti**, **E.**, Vignali, E., Quartieri, S., Lazzeri, R. & Celi, S. (2023). Numerical investigation on circular and elliptical bulge tests for inverse soft tissue characterization. *Biomechanics and Modeling in Mechanobiology*, *22*(5), 1697–1707.

11 Mariotti, A., Vignali, E., **Gasparotti**, **E.**, Morello, M., Singh, J., Salvetti, M. V. & Celi, S. (2023). In vitro analysis of hemodynamics in the ascending thoracic aorta: Sensitivity to the experimental setup. *Applied Sciences*, *13*(8), 5095.

12 Pizzuto, A., Raimondi, F., Celi, S., Calabri, G. B., Spaziani, G., **Gasparotti**, **E.**, Capellini, K., Clemente, A., Amoretti, F., Favilli, S. Et al. (2023). Transcatheter treatment of native idiopathic multiloculated aortic aneurysm guided by 3d printing technology. *Case Reports*, *8*, 101662.

13 Scalera, S., Clemente, A., Pizzuto, A., **Gasparotti**, **E.**, Fanni, B. M., Vignali, E., Capellini, K., Celi, S. & Santoro, G. (2023). 3d printed model-guided neonatal transcatheter closure of left main coronary artery-to-right ventricle fistula. *Case Reports*, *16*, 101869.

14 Vignali, E., Gasparotti, E., Haxhiademi, D. & Celi, S. (2023). Fluid dynamic model for extracorporeal membrane oxygenation support and perfusion in cardiogenic shock. *Physics of Fluids*, *35*(11).

15 Bardi, F., **Gasparotti**, **E.**, Vignali, E., Avril, S. & Celi, S. (2022). A hybrid mock circulatory loop for fluid dynamic characterization of 3d anatomical phantoms. *IEEE Transactions on Biomedical Engineering*, *70*(5), 1651–1661.

16 **Gasparotti**, **E.**, Vignali, E., Mariani, M., Berti, S. & Celi, S. (2022c). Image-based modelling and numerical simulations of the cardioband® procedure for mitral valve regurgitation repair. *Computer Methods in Applied Mechanics and Engineering*, *394*, 114941.

17 Mariotti, A., Vignali, E., Gasparotti, E., Marchese, P., Morello, M., Salvetti, M., Celi, S. Et al. (2022). Hemodynamics in healthy and pathological thoracic aorta: Integration of in-vivo data in cfd simulations and in in-vitro experiments, *288949*, 1–12.

18 Mariotti, A., **Gasparotti**, **E.**, Vignali, E., Marchese, P., Celi, S. & Salvetti, M. V. (2022b). Integrating in-vivo data in cfd simulations and in in-vitro experiments of the hemodynamic in healthy and pathologic thoracic aorta, 208–219.

19 Santoro, G., Rizza, A., Pizzuto, A., Berti, S., Cuman, M., **Gasparotti**, **E.**, Capellini, K., Cantinotti, M., Clemente, A. & Celi, S. (2022). Transcatheter treatment of ascending aorta pseudoaneurysm guided by 3d-model technology. *Case Reports*, *4*(6), 343–347.

20 Vignali, E., **Gasparotti**, **E.**, Mariotti, A., Haxhiademi, D., Ait-Ali, L. & Celi, S. (2022). High-versatility left ventricle pump and aortic mock circulatory loop development for patient-specific hemodynamic in vitro analysis. *ASAIO Journal*, *68*(10), 1272–1281.

21 Capellini, K., **Gasparotti**, **E.**, Cella, U., Costa, E., Fanni, B. M., Groth, C., Porziani, S., Biancolini, M. E. & Celi, S. (2021). A novel formulation for the study of the ascending aortic fluid dynamics with in vivo data. *Medical Engineering Physics*, *91*, 68–78.

22 Cavallo, A., **Gasparotti**, **E.**, Losi, P., Foffa, F., T. Al Kayal, T., Vignali, E., Celi, S. & Soldani, G. (2021). Fabrication and in-vitro characterization of a polymeric aortic valve for minimally invasive valve replacement. *Journal of the Mechanical Behavior of Biomedical Materials*, *115*, 104294.

23 Celi, S., **Gasparotti**, **E.**, Capellini, K., Vignali, E., Fanni, B. M., Ali, L. A., Cantinotti, M., Murzi, M., Berti, S., Santoro, G. Et al. (2021). 3d printing in modern cardiology. *Current Pharmaceutical Design*, *27*(16), 1918–1930.

24 Celi, S., Vignali, E., Capellini, K. & **Gasparotti**, **E.** (2021). On the role and effects of uncertainties in cardiovascular in silico analyses. *Frontiers in Medical Technology*, *3*, 748908.

25 Cuman, M., Santoro, G., Capellini, K., **Gasparotti**, **E.**, Pizzuto, A., Berti, S., Celi, S. & Clemente, A. (2021). 3d model-guided trans-catheter closure of a complex aortic paravalvular leak. *Journal of Cardiovascular Medicine*, *22*(8), 660–663.

26 di Bartolo, F., Vignali, E., **Gasparotti**, **E.**, Malacarne, A., Landini, L. & Celi, S. (2021). Numerical simulations of light scattering in soft anisotropic fibrous structures and validation of a novel optical setup from fibrous media characterization. *Electronics*, *10*(5).

27 Geronzi, L., **Gasparotti**, **E.**, Capellini, K., Cella, U., Groth, C., Porziani, S., Chiappa, A., Celi, S. & Biancolini, M. E. (2021). High fidelity fluid-structure interaction by radial basis functions mesh adaption of moving walls: A workflow applied to an aortic valve. *Journal of Computational Science*, *51*, 101327.

28 Pizzuto, A., Santoro, G., Baldi, C., Celi, S., Cuman, M., Berti, S., **Gasparotti**, **E.**, Capellini, K., Clemente, A. Et al. (2021). 3d model-guided transcatheter closure of left ventricular pseudoaneurysm: A case series. *Journal of Cardiovascular Medicine*, *22*(12), e1–e7.

29 Vignali, E., **Gasparotti**, **E.**, Capellini, K., Fanni, B. M., Landini, L., Positano, V. & Celi, S. (2021). Modelling biomechanical interaction between soft tissue and soft robotic instruments: Importance ofconstitutive anisotropic hyperelastic formulations. *The International Journal of Robotics Research*, *40*(1), 224–235.

30 Vignali, E., **Gasparotti**, **E.**, Celi, S. & Avril, S. (2021). Fully-coupled fsi computational analyses in the ascending thoracic aorta using patient-specific conditions and anisotropic material properties. *Frontiers in Physiology*, *12*, 732561.

31 Vignali, E., **Gasparotti**, **E.**, Landini, L. & Celi, S. (2021). Development and realization of an experimental bench test for synchronized small angle light scattering and biaxial traction analysis of tissues. *Electronics*, *10*(4).

32 Capellini, K., Tripicchio, P., Vignali, E., **Gasparotti**, **E.**, Ali, L. A., Cantinotti, M., Federici, D., Santoro, G., Alfonzetti, F., Evangelista, C. Et al. (2020). 3d printing and 3d virtual models for surgical and percutaneous planning of congenital heart diseases., 281–287.

33 Geronzi, L., **Gasparotti**, **E.**, Capellini, K., Cella, U., Groth, C., Porziani, S., Chiappa, A., Celi, S. & Biancolini, M. E. (2020). Advanced radial basis functions mesh morphing for high fidelity fluid-structure interaction with known movement of the walls: Simulation of an aortic valve, 280–293.

34 Mariotti, A., Vignali, E., **Gasparotti**, **E.**, Capellini, K., Celi, S. & Salvetti, M. V. (2020). Comparison between numerical and mri data of ascending aorta hemodynamics in a circulatory mock loop, 898–907.

35 Vignali, E., di Bartolo, F., **Gasparotti**, **E.**, Malacarne, A., Concistré, G., Chiaramonti, F., Murzi, M., Positano, V., Landini, L. & Celi, S. (2020). Correlation between micro and macrostructural biaxial behavior of ascending thoracic aneurysm: A novel experimental technique. *Medical Engineering Physics*, *86*, 78–85.

36 Vignali, E., **Gasparotti**, **E.**, Fanni, B. M., Ait-Ali, L., Positano, V., Landini, L. & Celi, S. (2020). Development of a fully controllable real-time pump to reproduce left ventricle physiological flow, 908–919.

37 Zaccaria, A., Danielli, F., **Gasparotti**, **E.**, Fanni, B. M., Celi, S., Pennati, G. & Petrini, L. (2020). Left atrial appendage occlusion device: Development and validation of a finite element model. *Medical Engineering Physics*, *82*, 104–118.

38 Fanni, B. M., Sauvage, E., Capelli, C., Gasparotti, E., Vignali, E., Schievano, S., Landini, L., Positano, V. & Celi, S. (2019b). A numerical and 3d printing framework for the in vivo mechanical assessment of patient-specific cardiovascular structures, 31–39.

39 Gasparotti, E., Cella, U., Vignal, E., Costa, E., Soldani, G., Cavallo, A., Losi, P., Biancolini, M. & Celi, S. (2019). A combined approach of numerical simulation and additive manifacturing technique for in-silico and in-vitro testing of a 3d printing-based aortic polymeric heart valve, 19–30.

40 **Gasparotti**, **E.**, Vignali, E., Losi, P., Scatto, M., Fanni, B. M., Soldani, G., Landini, L., Positano, V. & Celi, S. (2019). A 3d printed melt-compounded antibiotic loaded thermoplastic polyurethane heart valve ring design: An integrated framework of experimental material tests and numerical simulations. *International Journal of Polymeric Materials and Polymeric Biomaterials*, *68*(1-3), 1–10.

41 Vignali, E., Manigrasso, Z., **Gasparotti**, **E.**, Biffi, B., Landini, L., Positano, V., Capelli, C. & Celi, S. (2019). Design, simulation, and fabrication of a three-dimensional printed pump mimicking the left ventricle motion. *The International journal of artificial organs*, *42*(10), 539–547.

42 Vivoli, G., **Gasparotti**, **E.**, Rezzaghi, M., Cerone, E., Mariani, M., Landini, L., Berti, S., Positano, V. & Celi, S. (2019). Simultaneous functional and morphological assessment of left atrial appendage by 3d virtual models. *Journal of healthcare engineering*, *2019*.

43 Capellini, K., Vignali, E., Costa, E., **Gasparotti**, **E.**, Biancolini, M. E., Landini, L., Positano, V. & Celi, S. (2018). Computational fluid dynamic study for ataa hemodynamics: An integrated image-based and radial basis functions mesh morphing approach. *Journal of biomechanical engineering*, *140*(11).

Chapters

1 Celi, S., Cioffi, M., Fanni, M. B., Capellini, K., **Gasparotti**, **E.**, Vignali, E., Positano, V., Haxhiademi, D., Costa, E., Landini, L., Daskalopoulus, E., Piergiovanni, M., Dura, A., Gribaudo, L. & Whelan, M. (2022). Advanced non-animal models in biomedical researc. In *Eur 30334/5 en, publications office of the european union, uxembourg„ isbn 978-92-76-56984-8, doi:10.2760/276664, jrc130702*.

2 **Gasparotti**, **E.**, Vignali, E., Capellini, K., Fanni, B. M., Cerillo, A. G., Berti, S., Positano, V., Landini, L. & Celi, S. (2018). A healthcare digital twin using integrated imaging and finite element model: Developing a pre-planning phase to improve the performances of a cardioband procedure for the treatment of mitral regurgitation. In *Enginsoft newsletter: Simulation based engineering & data sciences* (p. 52).

3. Capellini, K., Costa, E., Biancolini, M. E., Porziani, S., **Gasparotti**, **E.**, Positano, V., Landini, L. & Celi, S. (2017). Studio parametrico della progressione dell'aneurisma dell'aorta mediante tecniche di mesh morphing. In *Analisi e calcolo* (pp. 20–25).

International Conference Papers

1. Dell'Agnello, F., Vignali, E., Capellini, K., Scarpolini, M. A., **Gasparotti**, **E.** & Celi, S. (2024). A dynamic ct based pipeline to assess hemodynamic indexes and wall stiffness of the aorta, In *9th european congress on computational methods in applied sciences and engineering*, 3-7 June 2024, Lisboa, Portugal.
2. Fanni, B. M., **Gasparotti**, **E.**, Esposito, A., Danielli, F., Berti, F., Berti, S., Pennati, G., Petrini, L. & Celi, S. (2024). Left atrial appendage occlusion: A 3d printed simulator for the patient-specific procedural planning and training, In *29th congress of the european society of biomechanics*, June 30- July 3, 2024, Edinburgh, United Kingdom.
3. **Gasparotti**, **E.**, Fanni, B. M., Dell'Amico, M., Danielli, F., Berti, F., Petrini, L., Pennati, G. & Celi, S. (2024). Design and fabrication of deformable 3d printed model of patient-specific left atrium for piv investigation, In *29th congress of the european society of biomechanics*, June 30- July 3, 2024, Edinburgh, United Kingdom.
4. **Gasparotti**, **E.**, Vignali, E., Haxhiademi, D. & Celi, S. (2024). A new clinical tool for the regulation of ecmo support in patients under cardiac shock, In *29th congress of the european society of biomechanics*, June 30- July 3, 2024, Edinburgh, United Kingdom.
5. Vignali, E., **Gasparotti**, **E.**, Bardi, F., Avril, S. & Celi, S. (2024). Fluid dynamic analysis of aaa phantoms via led-piv in a hybrid mock circulatory loop, In *29th congress of the european society of biomechanics*, June 30- July 3, 2024, Edinburgh, United Kingdom.
6. Vignali, E., **Gasparotti**, **E.**, Dell'Agnello, F., Ferrantini, C., Sacconi, L., Recchia, F. & Celi, S. (2024). Lce-based actuation of synthetic vessels: Experimental and numerical approaches, In *29th congress of the european society of biomechanics*, June 30- July 3, 2024, Edinburgh, United Kingdom.
7. Vignali, E., **Gasparotti**, **E.**, Mazzoli, M., Haxhiademi, D. & Celi, S. (2024). Extra corporeal membrane oxygenation support for perfusion in cardiac shock: A computational analysis, In *9th european congress on computational methods in applied sciences and engineering*, 3-7 June 2024, Lisboa, Portugal.
8. Bardi, F., Antonuccio, M. N., **Gasparotti**, **E.**, Vignali, E., Aguirre, M., Avril, S. & Celi, S. (2023). Fsi computational model of a patient specific aaa validated by led illumintaed piv, In *28th congress of the european society of biomechanics*, July 9-12, 2023, Maastricht, the Netherlands.
9. Calò, K., Capellini, K., De Nisco, G., Mazzi, V., **Gasparotti**, **E.**, Gallo, D., Celi, S. & Morbiducci, U. (2023a). Modelling aortic flows: Impact of wall displacements on large-scale hemodynamic coherence in ascending aorta, In *28th congress of the european society of biomechanics*, July 9-12, 2023, Maastricht, the Netherlands.
10. Danielli, F., Berti, F., Fanni, B. M., **Gasparotti**, **E.**, Celi, S., Pennati, G. & Petrini, L. (2023). On the need of a reliable numerical model to simulate the left atrial appendage occlusion: A finite element study, In *28th congress of the european society of biomechanics*, July 9-12, 2023, Maastricht, the Netherlands.
11. Dell'Agnello, F., Scarpolini, M. A., Capellini, K., Vignali, E., **Gasparotti**, **E.**, Cademartiri, F. & Celi, S. (2023b). A combined cfd and mesh morphing technique to investigate thoracic aorta hemodynamics, In *28th congress of the european society of biomechanics*, July 9-12, 2023, Maastricht, the Netherlands.
12. Fanni, B. M., **Gasparotti**, **E.**, Capellini, K., Danielli, F., Berti, F., Berti, S., Pennati, G., Petrini, L. & Celi, S. (2023). A numerical workflow to investigate the hemodynamics effects of the left atrial appendage occlusion, In *28th congress of the european society of biomechanics*, July 9-12, 2023, Maastricht, the Netherlands.

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Massa, 22nd May 2024

Emanuele Gasparotti