



VALENTINA MAZZI

14/05/1992 (Verona, IT)

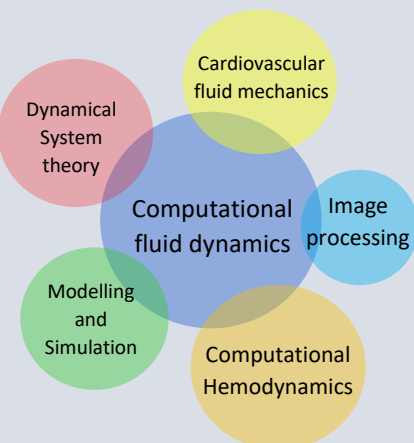
+39 3493029821

vale.mazzi14@gmail.com
valentina.mazzi@polito.it

@ValentinaMazzi9

/in/valentina-mazzi-35752b1b3

Overview



Education

May 2021	Ph.D., Bioengineering and Surgical-Medical Sciences	<i>Politecnico di Torino, Italy</i>
Mar 2017	MSc., Mathematics (110 cum laude/110)	<i>Università di Verona, Italy</i>
Nov 2014	BSc., Applied Mathematics (102/110)	<i>Università di Verona, Italy</i>

Research

Dec 2020 present	Postdoctoral Researcher Supervisor: Prof. Umberto Morbiducci	<i>Politecnico di Torino, Italy</i>
	Advanced fluid mechanics methods development to explore near-wall and intravascular flow features in healthy and diseases cardiovascular districts	
Sep 2021 Oct 2021	Research Secondee Project: Accurate Roms for Industrial Applications Supervisor: Prof. Angelo Iollo	<i>Université de Bordeaux, France</i>
	Hemodynamic characterization of Abdominal Aortic	
Mar 2019 July 2019	Visiting Ph.D. Student Supervisor: Prof. David A. Steinman	<i>University of Toronto, Canada</i>
	Advanced fluid mechanics analysis of near-wall and intravascular hemodynamics in intracranial aneurysm models	
Oct 2017 Nov 2020	Ph.D. Candidate Supervisor: Prof. Umberto Morbiducci Prof. Diego Gallo	<i>Politecnico di Torino, Italy</i>
	- Eulerian-based method development to identify the topological skeleton of Wall Shear Stress on the luminal surface of 3D vessels - Identification of links between Wall Shear Stress topological skeleton and markers of vascular disease from real-world clinical data	
Mar 2016 July 2016	Erasmus+ Student Supervisor: Prof. Patricia Reynaud-Bouret	<i>Université Côte d'Azur, France</i>
	Theoretical and computational modelling in Neuroscience and cognitive science	

Experience

Dec 2016 Apr 2017	Data Analyst Internship	<i>MOXOFF S.p.A, Milan, Italy</i>
	Data Intelligence, Simulation Optimization, Machine Learning	
Jan 2014 Apr 2014	Internship	<i>Università di Verona, Italy</i>
	Mathematical models in oncology	

Programming

MATLAB
Python
LaTeX
R
Paraview · Tecplot
Ansys Fluent · SimVascular
vmtk



Awards

June 2021 **Finalist in the Ph.D. Level Student Paper Competition**
Summer Biomechanics, Bioengineering, & Biotransport Conference
Work: *Wall Shear Stress Topological Skeleton Analysis in Image-Based Stented Coronary Bifurcation Models*

Assignments

Oct 2018 President of the Ph.D. Student Body for the Ph.D. program in Bioengineering and
Nov 2020 medical-surgical sciences

Languages

Italian
English
French



Publications

Mazzi V., Gallo D., Calò K., Najafi M., Khan M. O., De Nisco G., Steinman D. A., Morbiducci U.; *A Eulerian method to Analyze Wall Shear Stress Fixed Points and Manifolds in Cardiovascular Flows*, Biomechanics and Modeling in Mechanobiology, 19:1403-1423, 2020.

G. De Nisco, D. Gallo, K. Siciliano, P. Tasso, M. Lodi Rizzini, **V. Mazzi**, K. Calò, M. Antonucci, U. Morbiducci; *Hemodialysis Arterio-venous Graft Design Reducing the Hemodynamic Risk of Vascular Access Dysfunction*, Journal of Biomechanics, 2020; 10.1016/j.jbiomech.2019.109591

K. Calò, D. Gallo, A. Steinman, **V. Mazzi**, S. Scarsoglio, L. Ridolfi, U. Morbiducci; *Spatio-temporal Hemodynamic Complexity in Carotid Arteries: an Integrated Computational Hemodynamics & Complex Networks-Based Approach*, IEEE Transactions on Biomedical Engineering, 2020; 67: 1841-1853. doi: 10.1109/TBME.2019.2949148

G. De Nisco, P. Tasso, K. Calò, **V. Mazzi**, D. Gallo, F. Condemi, S. Farzaneh, S. Avril, U. Morbiducci; *Deciphering ascending thoracic aortic aneurysm hemodynamics in relation to biomechanical properties*, Medical Engineering & Physics, 2020; 82: 119-129. doi.org/10.1016/j.medengphy.2020.07.003

U. Morbiducci*, **V. Mazzi***, M. Domanin, G. De Nisco, C. Vergara, D. A. Steinman, D. Gallo; *Wall shear stress topological skeleton independently predicts long-term restenosis after carotid bifurcation endarterectomy*, Annals of Biomedical Engineering, 2020; 48: 2936-2949. doi.org/10.1007/s10439-020-02607-9. * The two authors equally contributed.

Mazzi V., Morbiducci U., Calò K., De Nisco G., Lodi Rizzini M., Torta E., Caridi G. C. A, Chiastra C., Gallo D.; *Wall Shear Stress Topological Skeleton Analysis in Cardio-vascular Flows: Methods and Applications*, Mathematics, 9(7):720, 2021.

Mazzi V., De Nisco G., Hoogendoorn A., Calò K., Chiastra C., Gallo D., Steinman D. A., Wentzel J. J., Morbiducci U.; *Early Atherosclerotic Changes in Coronary Arteries are Associated with Endothelium Shear Stress Contraction/Expansion Variability*, Annals of Biomedical Engineering, 49(9): 2606-2621, 2021.

A. Candreva, M. Pagnoni, M. Lodi Rizzini, T. Mizukami, E. Gallinoro, **V. Mazzi**, D. Gallo, D. Meier, T. Shinke, JP. Aben, S. Nagumo, J. Sonck, D. Munhoz, S. Fournier, E. Barbato, W. Heggermont, S. Cook, C. Chiastra, U. Morbiducci, B. De Bruyne, O. Muller, C. Collet; *Risk of Myocardial Infarction based on Endothelial Shear Stress Analysis Using Coronary Angiography*, Atherosclerosis, 342, 28-35, 2022

Chiastra C., **Mazzi V.**, M. Lodi Rizzini, Calò K., Corti A., Acquasanta A., De Nisco G., Belligiano D., Cerrato E., Gallo D., Morbiducci U.; *Coronary Artery Stenting Affects Wall Shear Stress Topological Skeleton*, Journal of biomechanical engineering, 2022.

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Valentini Mazzi