PIERO
POLICASTRO

CONTACT INFO

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ABOUT ME

Piero Policastro is currently a doctoral candidate in electrical, electronic and communications engineering. He enrolled at the Polytechnic University of Turin to pursue a master's degree in e-health and medical informatics. During his academic journey, he acquired skills in MATLAB and the Python programming language. In particular, he has worked in the areas of signal analysis, artificial intelligence and image processing. In 2022, together with his team, he founded Viper.srl, a start-up company that develops algorithms for solving medical problems, particularly for the analysis of ultrasound images of the inferior vena cava.

EDUCATION

Bachelor's degree in Biomedical Engineering   2014 - 2018
Polytechnic of Turin | *Turin, Italy*

MSc Biomedical Engineering E-Health   2018 - 2020
Polytechnic of Turin | *Turin, Italy*
The thesis aims to develop a framework for classifying histopathological images and conducting data cleaning using a Bayesian Neural Network deep learning model.
Graduated with *summa cum laude*

Phd in Electrical, Electronics and Communications Engineering   2023 - Present
Polytechnic of Turin | *Turin, Italy*
The research focuses on the detailed analysis of vein pulsatility through advanced ultrasound image processing techniques.

EXPERIENCE

INTERNSHIP CLINICA FORNACA   Oct. 2017 - Mar. 2018
Private hospital | *Turin, Italy*

UNIVERISTY COLLABORATOR   Oct. 2019 - Mar. 2020
Polytechnic of Turin | *Turin, Italy*
Assistent of the Clinical informatics
Assistent of Neuro-engineering courses.

RESEARCHER FELLOW, PROJECT VIPER   Jul. 2020 - Oct. 2022
Polytechnic of Turin | *Turin, Italy*
Analysis of venous pulsatility using ultrasound imaging.

CHIEF TECNOLOGY OFFICER   Jun. 2022 - Present
Viper srl | *Turin, Italy*
Viper is a start-up company developing a software solution to help clinicians analyse the fluid status of patients using ultrasound imaging.

REASECHER   Oct. 2023 - Dic. 2023
CHUV university hospital | *Lausanne, Switzerland*
Conducted research on the correlation between ECG and respiratory signals in different phases of sleep.

UNIVERISTY COLLABORATOR   Mar. 2024 - Jul. 2024
Polytechnic of Turin | *Turin, Italy*
Assistent of the "Biomedical Signal Processing" courses.

PUBLICATIONS

Articles

Ermini, Leonardo, Stefano Seddone, Piero Policastro, Luca Mesin, Paolo Pasquero, and Silvestro Roatta (Dec. 2021). "The Cardiac Caval Index: Improving Noninvasive Assessment of Cardiac Preload". In: *Journal of Ultrasound in Medicine* 41.9, pp. 2247–2258. ISSN: 1550-9613. DOI: 10.1002/jum.15909. URL: http://dx.doi.org/10.1002/jum.15909.

Mesin, Luca, Stefano Albani, Piero Policastro, Paolo Pasquero, Massimo Porta, Chiara Melchiorri, Gianluca Leonardi, Carlo Albera, Paolo Scacciatella, Pierpaolo Pellicori, Davide Stolfo, Andrea Grillo, Bruno Fabris, Roberto Bini, Alberto Giannoni, Antonio Pepe, Leonardo Ermini, Stefano Seddone, Gianfranco Sinagra, Francesco Antonini-Canterin, and Silvestro Roatta (Jan. 2022a). "Assessment of Phasic Changes of Vascular Size by Automated Edge Tracking-State of the Art and Clinical Perspectives". In: *Frontiers in Cardiovascular Medicine* 8. DOI: 10.3389/fcvm.2021.775635. URL: https://doi.org/10.3389%2Ffcvm.2021.775635.

Mesin, Luca, Luca Floris, Piero Policastro, Stefano Albani, Paolo Scacciatella, Nicola Pugliese, Stefano Masi, Andrea Grillo, Bruno Fabris, and Francesco Antonini-Canterin (June 2022b). "Estimation of Aortic Stiffness with Bramwell–Hill Equation: A Comparative Analysis with Carotid–Femoral Pulse Wave Velocity". In: *Bioengineering* 9.7, p. 265. DOI: 10.3390/bioengineering9070265. URL: https://doi.org/10.3390%2Fbioengineering9070265.

Mesin, Luca, Piero Policastro, Stefano Albani, Christina Petersen, Paolo Sciarrone, Claudia Taddei, and Alberto Giannoni (June 2022c). "Non-Invasive Estimation of Right Atrial Pressure Using a Semi-Automated Echocardiographic Tool for Inferior Vena Cava Edge-Tracking". In: *Journal of Clinical Medicine* 11.12, p. 3257. ISSN: 2077-0383. DOI: 10.3390/jcm11123257. URL: http://dx.doi.org/10.3390/jcm11123257.

Policastro, Piero, Giovanni Chiarion, Francesco Ponzio, Leonardo Ermini, Stefania Civera, Stefano Albani, Giuseppe Musumeci, Silvestro Roatta, and Luca Mesin (Apr. 2023). "Detection of Inferior Vena Cava in Ultrasound Scans through a Deep Learning Model". In: *Electronics* 12.7, p. 1725. ISSN: 2079-9292. DOI: 10.3390/electronics12071725. URL: http://dx.doi.org/10.3390/electronics12071725.

Policastro, Piero, Leonardo Ermini, Stefania Civera, Stefano Albani, Giuseppe Musumeci, Silvestro Roatta, and Luca Mesin (2024). "Effect of Respirophasic Displacement of the Inferior Vena Cava on Size Measurement in 2D Ultrasound Imaging". In: *ULTRASOUND IN MEDICINE AND BIOLOGY* 50.12, pp. 1785/1792. DOI: 10.1016/j.ultrasmedbio.2024.07.005. URL: {https://www.sciencedirect.com/science/article/pii/S0301562924002679?via=ihub}.

Policastro, Piero and Luca Mesi (Aug. 2024). "Estimation of Inferior Vena Cava Size from Ultrasound Imaging in X-Plane". In: *Electronics* 13.17, p. 3406. ISSN: 2079-9292. DOI: 10.3390/electronics13173406. URL: http://dx.doi.org/10.3390/electronics13173406.

Policastro, Piero and Luca Mesin (Sept. 2023). "Processing Ultrasound Scans of the Inferior Vena Cava: Techniques and Applications". In: *Bioengineering* 10.9, p. 1076. ISSN: 2306-5354. DOI: 10.3390/bioengineering10091076. URL: http://dx.doi.org/10.3390/bioengineering10091076.

Seddone, Stefano, Leonardo Ermini, Piero Policastro, Luca Mesin, and Silvestro Roatta (Feb. 2022). "Evidence that large vessels do affect near infrared spectroscopy". In: *Scientific Reports* 12.1. DOI: 10.1038/s41598-022-05863-y. URL: https://doi.org/10.1038%2Fs41598-022-05863-y.

Seddone, Stefano, Leonardo Ermini, Piero Policastro, Raffaele Pertusio, Luca Mesin, and Silvestro Roatta (May 2021). "Do Large Vessels Affect Hemodynamic Monitoring by Near Infrared Spectroscopy?" In: *The FASEB Journal* 35.S1. DOI: 10.1096/fasebj.2021.35.s1.01913. URL: https://doi.org/10.1096%2Ffasebj.2021.35.s1.01913.

Conference

Mesin, Luca, Piero Policastro, Andrea Re, Cristian Sanson, Stefano Albani, Christina Petersen, Paolo Sciarrone, Claudia Taddei, and Alberto Giannoni (Dec. 2022d). "271 AUTOMATED REAL TIME ECHOCARDIO-GRAPHIC TOOL FOR EDGE TRACKING OF INFERIOR VENA CAVA AND NON-INVASIVE ESTIMA-TION OF RIGHT ATRIAL PRESSURE". In: vol. 24. SupplementK. Oxford University Press (OUP). DOI: 10.1093/eurheartjsupp/suac121.212. URL: http://dx.doi.org/10.1093/EURHEARTJSUPP/SUAC121.212.

Piero, Policastro, Romanelli Marco, Roatta Silvestro, Pasquero Paolo, and Mesin Luca (2025a). "Continuos, long term monitoring of IVC size and collapsibility indexes during simulated blood volume challenges". In: *Proceedings GNB2025, June 18th-20th 2025, Palermo, Italy*, pp. 1–4.

Piero, Policastro, Raggi Matteo, Macri Umberto, Mattana Alessandra, and Mesin Luca (2025b). "Dehydration and Rehydration Monitoring Through Ultrasound Imaging of the Inferior Vena Cava". In: *Proceedings GNB2025, June 18th-20th 2025, Palermo, Italy*, pp. 1–4.

Piero, Policastro, Albani Stefano, Romanelli Marco, Leonardo Ermini, Roatta Silvestro, De Robertis Camilla, and Mesin Luca (2025c). "Evaluation of Cardio-vascular Adaptation in Subjects Undergoing Passive Leg Raising (PLR): an Inferior Vena Cava Study". In: *ANMCO, May 15th-17th 2025, Rimini, Italy*.

SKILLS

● ● ●   Python, Matlab

● ● ●   Tensorflow, Pythorch

● ● ●   IoT applications, Rest API, MQTT

● ● ○   Htlm, css, Javascript, Django

Languages
- Italian
- English