



Orestis Vardoulis

Postdoctoral Research Fellow, Pediatric Surgery

 Curriculum Vitae available Online

Bio

BIO

Dr. Orestis Vardoulis is a Postdoctoral Fellow at the Stanford School of Medicine (department of Pediatric Surgery). Orestis completed his studies in Mechanical Engineering at the Aristotle University of Thessaloniki, Greece and received his PhD in Biotechnology and Bioengineering at the Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland. During his doctoral research, Orestis worked extensively with non invasive methods for hemodynamic monitoring and during his PostDoctoral research he developed flexible electronics for health monitoring. Orestis is an alumnus of the Stanford Biodesign Fellowship program where he conducted extensive research in identifying unmet clinical needs and validated medical technology projects from concept to product. Currently, Orestis works with the Pediatric Health Technology Incubator Laboratory, focusing on clinical needs around umbilical vein catheterization for neonates. In parallel he contributes to the activities of the UCSF - Stanford pediatric device consortium where he coordinates early stage support. Orestis also contributes to the Stanford Wearable Electronics Initiative where he co-founded the affiliated eWear Student and PostDoc association.

HONORS AND AWARDS

- Jack Perkins" Award, Institute of Engineering and Physics in Medicine (2018)
- Early Mobility Award, Swiss National Science Foundation (2015)
- 2nd Place "Sotiris Papastamatis", Athens Medical Society (2014)
- Award for exceptional doctoral research, EPFL - "Chorafas Foundation" (2014)
- Merit Award "Magna Cum Laude", ISMRM (2014)
- 1st Place "Sotiris Papastamatis", Athens Medical Society (2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, ASME (2017 - present)

PROFESSIONAL EDUCATION

- Diploma, Arist. University Of Thessaloniki (2010)
- Doctor of Philosophy, Ecole Polytechnique Federale Lausanne (2015)

LINKS

- Personal Site: <http://ovardoulis.com>

Research & Scholarship

PROJECTS

- System for UVC placement and monitoring

- Automated Detection of Cerebral Ischemia to Reduce Disability and Mortality
- Wearable and flexible electronics for cardiovascular health monitoring

LAB AFFILIATIONS

- Paul Yock, Biodesign (8/1/2017 - - 8/31/2018)
- Zhenan Bao, Bao Research Group (2/1/2016 - - 7/31/2017)

Publications

PUBLICATIONS

- **A hierarchically patterned, bioinspired e-skin able to detect the direction of applied pressure for robotics** *SCIENCE ROBOTICS*
Boutry, C. M., Negre, M., Jorda, M., Vardoulis, O., Chortos, A., Khatib, O., Bao, Z.
2018; 3 (24)
- **An integrated self-healable electronic skin system fabricated via dynamic reconstruction of a nanostructured conducting network.** *Nature nanotechnology*
Son, D., Kang, J., Vardoulis, O., Kim, Y., Matsuhisa, N., Oh, J. Y., To, J. W., Mun, J., Katsumata, T., Liu, Y., McGuire, A. F., Krasen, M., Molina-Lopez, et al
2018
- **Cardiovascular morphometry with high-resolution 3D magnetic resonance: First application to left ventricle diastolic dysfunction** *MEDICAL ENGINEERING & PHYSICS*
Gallo, D., Vardoulis, O., Monney, P., Piccini, D., Antiochos, P., Schwitter, J., Stergiopoulos, N., Morbiducci, U.
2017; 47: 64–71
- **In vivo evaluation of a novel, wrist-mounted arterial pressure sensing device versus the traditional hand-held tonometer** *MEDICAL ENGINEERING & PHYSICS*
Vardoulis, O., Saponas, T., Morris, D., Villar, N., Smith, G., Patel, S., Tan, D.
2016; 38 (10): 1063–69
- **Single breath-hold 3D measurement of left atrial volume using compressed sensing cardiovascular magnetic resonance and a non-model-based reconstruction approach** *JOURNAL OF CARDIOVASCULAR MAGNETIC RESONANCE*
Vardoulis, O., Monney, P., Bermano, A., Vaxman, A., Gotsman, C., Schwitter, J., Stuber, M., Stergiopoulos, N., Schwitter, J.
2015; 17: 47
- **Improved Variational Denoising of Flow Fields with Application to Phase-Contrast MRI Data** *IEEE SIGNAL PROCESSING LETTERS*
Bostan, E., Lefkimiatis, S., Vardoulis, O., Stergiopoulos, N., Unser, M.
2015; 22 (6): 762–66
- **In vivo evaluation of a novel 'diastole-patching' algorithm for the estimation of pulse transit time: advancing the precision in pulse wave velocity measurement** *PHYSIOLOGICAL MEASUREMENT*
Papaioannou, T. G., Vardoulis, O., Protogerou, A., Konstantonis, G., Sfikakis, P. P., Stefanadis, C., Stergiopoulos, N.
2015; 36 (1): 149–61
- **First in vivo application and evaluation of a novel method for non-invasive estimation of cardiac output** *MEDICAL ENGINEERING & PHYSICS*
Papaioannou, T. G., Soulis, D., Vardoulis, O., Protogerou, A., Sfikakis, P. P., Stergiopoulos, N., Stefanadis, C.
2014; 36 (10): 1352–57
- **Total arterial compliance estimated by a novel method and all-cause mortality in the elderly: the PROTEGER study** *AGE*
Papaioannou, T. G., Protogerou, A. D., Stergiopoulos, N., Vardoulis, O., Stefanadis, C., Safar, M., Blacher, J.
2014; 36 (3): 1555–63
- **Validation of a novel and existing algorithms for the estimation of pulse transit time: advancing the accuracy in pulse wave velocity measurement** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Vardoulis, O., Papaioannou, T. G., Stergiopoulos, N.
2013; 304 (11): H1558–H1567
- **SPATIO-TEMPORAL REGULARIZATION OF FLOW-FIELDS**
Bostan, E., Vardoulis, O., Piccini, D., Tafti, P., Stergiopoulos, N., Unser, M., IEEE
IEEE.2013: 836–39

- **3D simulation of the aqueous flow in the human eye**
Villamarin, A., Roy, S., Hasballa, R., Vardoulis, O., Reymond, P., Stergiopoulos, N.
ELSEVIER SCI LTD.2012: 1462–70

- **On the Estimation of Total Arterial Compliance from Aortic Pulse Wave Velocity** *ANNALS OF BIOMEDICAL ENGINEERING*
Vardoulis, O., Papaioannou, T. G., Stergiopoulos, N.
2012; 40 (12): 2619–26

- **Generic and patient-specific models of the arterial tree** *JOURNAL OF CLINICAL MONITORING AND COMPUTING*
Reymond, P., Vardoulis, O., Stergiopoulos, N.
2012; 26 (5): 375–82

- **The "systolic volume balance" method for the noninvasive estimation of cardiac output based on pressure wave analysis** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Papaioannou, T. G., Vardoulis, O., Stergiopoulos, N.
2012; 302 (10): H2064–H2073

- **Impact of Aortic Grafts on Arterial Pressure: A Computational Fluid Dynamics Study** *EUROPEAN JOURNAL OF VASCULAR AND ENDOVASCULAR SURGERY*
Vardoulis, O., Coppens, E., Martin, B., Reymond, P., Tozzi, P., Stergiopoulos, N.
2011; 42 (5): 704–10