Nikolaos Vasios

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About me

I am a 5th year PhD Candidate in Mechanical Engineering at Harvard University, graduating in May of 2020. In my research, I combine numerical methods, analytical models and simple experiments to study the behavior of non-linear solids, structures and devices. I have mentored three students on independent research projects for a total of 24 months. I seek to acquire new skills, interact and collaborate with people, face new challenges and use my skill-set to solve complex problems.

Dassault Systemes
Abaqus Structural Analysis
Associate

Skills

- Abaqus
- Python
- Matlab
- Comsol
- Solidworks
- C, C++
- Fortran

Education

since 2017 **Ph.D. candidate in Mechanical Engineering** — Cambridge, MA, USA
John A. Paulson School of Engineering & Applied Sciences, Harvard University

2015-2017 **M.Sc. in Mechanical Engineering** — Cambridge, MA, USA
John A. Paulson School of Engineering & Applied Sciences, Harvard University
Majoring in Mechanical Engineering and Applied Mathematics

2010-2015 **B.Sc. (with Honors) in Mechanical Engineering** — Volos, Greece
Department of Mechanical Engineering, University of Thessaly
Majoring in Computational Solid and Structural Mechanics

Experience

2019 **Engineering Consulting Intern** — Veryst Engineering, Needham, MA

2014 **Mechanical Engineering Intern** — Mechatronics Institute, CE.R.T.H.
On the effect of initial crystal lattice orientation to the macroscopic plastic behavior of metal single crystals subjected to uni-axial deformation

2014 **Research Assistant** — CE.R.T.H.
CompETe EU FP7-SME-2013 (Composites Evaluation in aircraft industry through Triplex-IR imaging system) 'Finite element thermal modelling and investigation of defects in CFRP composite panels'

2013 **Mechanical Engineering Intern** — Mechatronics Institute, CE.R.T.H.
Assessment and evaluation of crack-like flaws in pressure vessels and reactors in accordance with API FFS and British standards

Publications

2019 Vasios, N., Gorissen, B., Deng, B., Bertoldi K., Transition Waves in Highly Tunable Bistable Membranes, *In Preparation*

2019 Melancon, D., Gorissen, B., Torbati., M.,Vasios, N., Bertoldi. K., Harnessing shell instabilities for soft robotic jumping, *In Preparation*

2019 Fernandes., M., Gross, A., Vasios, N., Bertoldi, K., Soft Robotic Gripper with Camera-less Object Classification using Machine Learning, 2019, (*In Preparation*)

2018 Sang Yup, K., Baines, S., Booth, J., Vasios, N., Bertoldi, K., Kramer-Bottiglio, R., Reconfigurable Soft Body Trajectories using Unidirectionally Stretchable Composite Laminae, *Nature Communications*, (10), 3464

2018 Vasios, N., Gross, A., Soifer, S., Overvelde, J., Bertoldi, K., Harnessing Viscous Flow to Simplify the Actuation of Fluidic Soft Robots, *SoRo*, (10), 1089

2018 Vasios, N., Aktas, B., Narang, Y., Howe, R., Bertoldi, K., Numerical Analysis of Periodic Laminar and Fibrous media undergoing a Jamming Transition, *EJMSOL*, (75), 322-329

2017 Boatti, E., Vasios, N., Bertoldi, K., Origami Metamaterials for Tunable Thermal Expansion, *Advanced Materials*, (29), 26, 1700360

Awards/Certifications

2019, 2017 **Certificate of Excellence and Distinction in Teaching** — Harvard University
Computational Solid & Structural Mechanics (Undergraduate Level, ES128) : Spring of 2017 and Spring of 2019.
Physical Mathematics I (Graduate Level, AM201): Fall of 2019

2018 **Abaqus Structural Analysis Associate Certification** — Dassault Systems

2017 **Gerondelis Foundation Scholarship** — Harvard University
Awarded to Graduate Students of a Greek descent pursuing a graduate degree in the United States

2015 **Budiansky-Chen Fellowship in Applied Mathematics** — Harvard University