Sayna Ebrahimi

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Education

UC Berkeley
PhD Candidate; Mechanical Engineering
Co-advised by Professors David Steigmann and Trevor Darrell
Research focus: Applied Math, Meta-learning for solving ODEs, High Performance Computing
Berkeley, CA
2013 – 2020

UC Berkeley
Master of Science in Computer Science
Advised by Professor Trevor Darrell
Research focus: Lifelong Learning, Meta-Learning, Predictive Uncertainty
Berkeley, CA
2017 – 2020

University of South Alabama
Master of Science in Mechanical Engineering
Advised by Professor Anh-Vu Phan
Mobile, AL
2011 – 2013

Khaje Nasir University of Technology
Bachelor of Science in Aerospace Engineering
Tehran, Iran
2007 – 2011

Research Interest

Machine Learning, Computer Vision, Lifelong Learning, Meta Learning

Research/Industry Experience

Berkeley Artificial Intelligence Research (BAIR)
Graduate Student Researcher
Developing new lifelong learning algorithms, gradient-free optimization techniques
Berkeley, CA
2016 - present

NVIDIA
Research Intern
Designing new algorithms to predict uncertainty for end-to-end driving models
Mentor: Urs Muller, Larry Jackle
Holmdel, NJ
Summer 2017

Computational Mechanics Lab
Graduate Student Researcher
Developing new parallel algorithms for Peridynamics, Meta-learning algorithms for solving ODEs
Berkeley, CA
2013 - present

Current Research Publications

- **Sayna Ebrahimi**, Anna Rohrbach, Trevor Darrell, Gradient-free policy architecture search and adaptation, *Conference on Robotic Learning (CoRL) 2017*

- **Sayna Ebrahimi**, Daniel Geng, Trevor Darrell, Surprisingly simple deep confidence prediction, *Under ECCV 2018 Review*

- Samaneh Azadi, Deepak Pathak, **Sayna Ebrahimi**, Trevor Darrell, Compositional GANs, *Under NIPS 2018 Review*

- **Sayna Ebrahimi**, Anna Rohrbach, Trevor Darrell, Gradient-free policy architecture search and adaptation, *WiCV workshop at CVPR 2018, Oral*

Honors and Awards

- Graduate Division Fellowship, UC Berkeley — 2016-2017
- Homer Powley Grant, (selected in a research proposal competition in body armor design — 2015
- Otto and Herta F. Kornei Endowment Fellowship — 2014
- Alabama NASA-EPSCoR Fellowship - Round 7 — 2012-2013

Previous Research Publications/Conference Talks

- **S. Ebrahimi**, M. Taylor, "Parallel Algorithms for CPU and GPU Peridynamic Computation", International Mechanical Engineering Congress & Exposition, November , 2016, Phoenix, Arizona

- **S. Ebrahimi**, M. Taylor, D. Steigmann, "A Mechanical Sub-Element Formulation of Plasticity in Ordinary State-Based Peridynamics", International Mechanical Engineering Congress & Exposition, November , 2016, Phoenix, Arizona

- M. Taylor, **S. Ebrahimi**, D. Steigmann, "A Peridynamic Model for Thin Shells via Descent from Three-Dimensional State-Based and Bond-Based Peridynamics", International Mechanical Engineering Congress & Exposition, November , 2016, Phoenix, Arizona

- **S. Ebrahimi**, D. Steigmann, K. Komvopoulos "Peridynamics Analysis of Elastic-Plastic Contacts", 13th U.S. National Congress on Computational Mechanics, July 26-30, 2015, San Diego, California

- **S. Ebrahimi** D. Steigmann,and K. Komvopoulos, Peridynamics analysis of the nanoscale friction and wear properties of amorphous carbon thin films, *Journal of Mechanics of Materials and Structures*, 10.5 (2015), 559-572.

- **S. Ebrahimi**, D. Steigmann, K. Komvopoulos "Wear process analysis of thin-films using Peridynamics", 17th U.S. National Congress on Theoretical and Applied Mechanics, June 15-20, 2014, East Lansing, Michigan

- **S. Ebrahimi** A. -V Phan, "Laplace SGBEM Modeling of Dynamic Crack Propagation through a Cluster of Inclusions" 17th U.S. National Congress on Theoretical and Applied Mechanics, June 15-20, 2014, East Lansing, Michigan

- **S. Ebrahimi**, A. -V. Phan, Dynamic crack growth modeling technique based upon the SGBEM in the Laplace domain, *Acta Mechanica*, (2013), 1-13

- **S. Ebrahimi**, and Phan, A.-V. Dynamic analysis of cracks using the SGBEM for elastodynamics in the laplace-space frequency domain *Engineering Analysis with Boundary Elements*, 37, 11 (2013), 1378-1391

- **S. Ebrahimi** A.-V. Phan, "Dynamic crack growth analysis in the Laplace-space frequency domain by the symmetric-Galerkin boundary element method." Proceedings of the IMECE-ASME 2013 International Mechanical Engineering Congress and Exposition, July 22-25, 2013, Raleigh, North Carolina

- **S. Ebrahimi**, A. -V. Phan, "Boundary Element Dynamic Fracture Analysis in the Frequency Domain: Fourier- or Laplace-Space?" 2012 IMECE-ASME 2012-89850, Houston, Texas.

- **S. Ebrahimi**, A. -V. Phan, Peridynamic Analysis of Crack-Inclusion Interaction in Unidirectional Fiber-Reinforced Composites, 2012 ASME-ECTC, Georgia Institute of Technology, Georgia

Programming Skills

Languages: Python, Bash scripting, C/C++
Deep learning frameworks: PyTorch, TensorFlow, Torch

Teaching Experience

- **UC Berkeley**   Berkeley, CA
  Mechanical Behavior of Materials (ME108)   *2013-2016*

- **UC Berkeley**   Berkeley, CA
  Data Structures (CS61B)   *Fall 2016*