Sayna Ebrahimi

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Education

- **UC Berkeley** — Berkeley, CA
  PhD Candidate; Mechanical Engineering / Computer Science — *2013 – 2020*
  Co-advised by Professors David Steigmann and Trevor Darrell
  Research focus in CS: Lifelong Learning, Few Shot Learning, Predictive Uncertainty
  Research focus in ME: Applied Math, Deep learning for solving ODEs

- **UC Berkeley** — Berkeley, CA
  Master of Science in Computer Science — *2017 – 2019*
  Advised by Professor Trevor Darrell

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

- **Khajeh Nasir University of Technology** — Tehran, Iran
  Bachelor of Science in Aerospace Engineering — *2007 – 2011*

Research Interest

Deep Learning, Lifelong Learning, Few Shot Learning, Predictive Uncertainty

Research/Industry Experience

- **Berkeley AI Research (BAIR)** — Berkeley, CA
  Graduate Student Researcher — *2016 - present*
  Developing new lifelong learning algorithms, Bayesian optimization, gradient-free optimization

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

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

Current Research Publications

- **Sayna Ebrahimi**, Mohamed Elhoseyni, Trevor Darrell, Marcus Rohrbach, Uncertainty-Guided Lifelong Learning in Bayesian Networks *Under review at ICLR*
- Edgar Schönfeld, **Sayna Ebrahimi**, Samarth Sinha, Trevor Darrell, Zeynep Akata, Generalized Zero- and Few-Shot Learning via Aligned Variational Autoencoders, *Under review at CVPR*
- Samaneh Azadi, Deepak Pathak, **Sayna Ebrahimi**, Trevor Darrell, Compositional GANs: Learning Conditional Image Composition, *Under review at CVPR*
- **Sayna Ebrahimi**, Anna Rohrbach, Trevor Darrell, Gradient-Free Supervised and Unsupervised Learning with Rewards, *WiCV workshop at CVPR 2018, Oral*
- **Sayna Ebrahimi**, Anna Rohrbach, Trevor Darrell, Gradient-free policy architecture search and adaptation, *Conference on Robotic Learning (CoRL) 2017*

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

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*

Service & Leadership

- **CVPR Workshop Chair**
  Workshop for Women in Computer Vision — *Summer 2019*
- **BAIR Undergraduate Mentor** — Berkeley, CA
  Mentored undergraduate students from underrepresented groups — *2017-2018*

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