Eric S. Harper

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Education

2018: Ph.D. in Materials Science and Engineering, University of Michigan
- Thesis Topic: *The Nature of the Entropic Bond*

2014: MS in Materials Science and Engineering, University of Michigan. GPA: 3.774/4.000

2011: Bachelor of Chemical Engineering, University of Dayton. GPA: 3.92/4.00

Skills

- Simulation Techniques: Molecular Dynamics, Monte Carlo, Finite Element Analysis
- Programming: Python, C++ (CUDA, MPI, OpenMP, Intel Thread Building Blocks), OpenGL
- Machine Learning: Scikit-image, Scikit-learn, Keras, TensorFlow
- Web Development: HTML, CSS, Javascript
- Remote Unix/Linux system usage and administration

Experience

2017 – Present: *Computational Scientist*, Azimuth Corporation at Air Force Research Labs, Dayton, OH
- Modeling non-linear mechanical properties in liquid-crystalline elastomers (LCEs)

2011 – 2017: *Ph.D. Candidate*, Materials Science and Engineering, University of Michigan
- Lead Developer of analysis software suite *Freud*
- Junior system administrator for group computational resources
- Instructor, MSE 365 Undergraduate Lab

2010 – 2011: *Teaching Associate*, University of Dayton, Chemical Engineering
- Chemical Engineering Computations; Separation Techniques; Process Dynamics and Control

2010 – 2011: *Consultant and Systems Administrator*, Composite Technical Services, Dayton, OH
- Conducted Life Cycle Assessments on composite and foam product lines
- Developed rigid foam formulations and conducted flame tests on foam samples

2008 – 2009: *Undergraduate Research Assistant*, Air Force Research Laboratories, Wright-Patt. AFB
- Presented photvoltaic research at American Chemical Society CeRMACS Conference (6/2010)

Selected Publications and Presentations

- *Nature of the Entropic Bond in Particle Assemblies*, submitted to *Nature*, 2018
  - Oral Presentation, APS March Meeting
- *Freud: a software suite for high-throughput simulation analysis* (https://bitbucket.org/glotzer/freud/)
  - Oral Presentation, AICHE Fall Meeting, APS Spring Meeting
- *Shape Allophiles Improve Entropic Assembly,* Soft Matter, 2015. DOI: 10.1039/c5sm01351h
  - Oral Presentation, MRS Fall Meeting, APS Spring Meeting

Grants, Honors, & Awards

2016 – 2017: MICDE Fellowship, University of Michigan

2012 – 2014: NSF Open Data IGERT Fellow, University of Michigan

2011 – 2012: William F. Hawkins Fellow, University of Michigan

2010 – 2011: Tau Beta Pi Geico Scholar

Professional Organizations

2015: Scientific Computing Student Club, founding member and President

2009: Tau Beta Pi – Advisor, MI Γ Chapter