laneenriqueschultz@gmail.com
lsschultz@wisc.edu
(806) 678-6904

Lane Enrique Schultz

Résumé

LinkedIn: lane-schultz-983920236
Website: leschultz.github.io
GitHub: leschultz

Education

Ph.D. Materials Science and Engineering, *University of Wisconsin-Madison*	(GPA: 3.70/4.0)	Aug 2024
M.S. Materials Science and Engineering, *University of Wisconsin-Madison*	(GPA: 3.70/4.0)	Dec 2020
B.S. Engineering, *Fort Lewis College*	(GPA: 3.99/4.0)	Dec 2017

Skills

Tools	Python, PyTorch, scikit-learn, Bash, Git, LaTeX, C++, Verilog, MATLAB, OpenHPC, Vim, Docker, Apptainer, Linux, VASP, LAMMPS, AutoCAD, SolidWorks
Communication	English and Spanish (fluent written and verbal)

Technical Experience

Research Assistant **Jun 2018 — Aug 2024**
Computational Materials Group, UW-Madison . . . . . Madison, WI

- **Machine Learning Domain of Applicability for Materials:** Developed a method to determine the domain of applicability for machine learning models in materials property prediction. Utilized kernel density estimation to measure dissimilarity between test and training data in feature space. This measure effectively distinguishes chemically distinct groups and correlates high dissimilarity with poor model performance and unreliable uncertainty estimates. Provided automated tools for researchers via a package on GitHub and PyPI.
- **Scientific Cluster Construction and Administration:** Assisted in building and managing two high-performance computing clusters using OpenHPC with Warewulf provisioning and OpenPBS queue management. Compiled materials research software including VASP, LAMMPS, and Python. Implemented Environment Modules to streamline software management, enhancing research efficiency and reproducibility.
- **Quantifying Metallic Glass Forming Ability:** Developed a high-throughput workflow for efficiently training machine learning interatomic potentials and simulating complex material properties. Developed predictive models for metallic glass forming ability using elemental and simulated properties. Demonstrated that key trends in properties with glass forming ability aligned with prior research insights from others.

Summer Undergraduate Research Experience **May 2017 — Aug 2017**
Computational Nuclear Engineering Research Group, UW-Madison . . . . . Madison, WI

- **Developed Toolkit:** Automated and visualized Direct Accelerated Geometry Monte Carlo (DAGMC) geometries in VisIt.
- **Collaboration Friendly Code:** The Python PEP 8 coding style was adopted to facilitate easier reading.

Summer Undergraduate Research Fellowship **May 2016 — Aug 2016**
Advanced Diagnostics and Propulsion Research Laboratory, Purdue . . . . . Durango, CO

- **Experimental Imaging:** Operated pressure vessels, X-ray tube sources, and high-speed cameras for analysis of two dimensional sprays.
- **Lead Shielding:** Constructed a protective lead enclosure for X-ray tube sources to shield operating personnel from excessive radiation exposure.

Additional Information

Interests	Movies, shows, video games, weight lifting, LEGOs, PC building, and coding
Citizenship	United States, Colombia, and the Chickasaw Nation