LIAM ANDREW MYHILL

Mechanical Engineer ~ Materials Researcher

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SUMMARY

A continuing graduate student/materials researcher at Clemson University interested in the fields of **Crystal Plasticity** and **Integrated Computational Material Engineering**. Collaborative developer on open-source modelling software MoDELIB (github.com/giacomo-po/MoDELib).

SKILLS

Languages: Python, C++, MATLAB, Bash

Technologies: Microsoft Suite, Pybind11, Pytorch.

PROJECTS

LANL — **Exascale Computing of Material Defect Evolution** — **Upcoming Publication**
Facilitated the briding of computational scales between Molecular Dynamics (MD) and Discrete Dislocation Dynamics (DDD). Research consultant on dislocation behavior.

LANL — **Analysis of Thermally Activated Dislocation Behaviors** — **Upcoming Publication**
Developed computational workflow to capture the energy landscape of glissile dislocations in continuum DDD. Validated results with transition-state theory rate analysis.

Clemson — **Continuum Modeling of Dislocations in Polymer Crystals** — **Upcoming Publication**
Developing a novel DDD model to describe defect evolution in crystalline polymer matrices. Currently replicates macroscopic plasticity trends.

Clemson — **Analysis of Grain Boundary Solute Drag via Kinetic Monte Carlo Simulation** — **Upcoming Publication**
Conducted over 200 individual simulation cases to gather statistics on concentration gradients local to a mobile grain boundary. Presented results at REU poster symposium (Clemson 2021).

EDUCATION + SCHOLARSHIP

1/2022 - 12/2023 — **Masters of Science, Mechanical Engineering** — **Clemson University**
Successfully defended Masters thesis 11/2023

8-2017/12-2021 — **Bachelors of Science, Mechanical Engineering** — **Clemson University**
Graduated Dec. 2021 - GPA 3.24/4.00

2021 — **NSF Funded Undergraduate Research Program** — **Clemson University**
Funded by NSF for KMC research

8-2017/12-2021 — **Palmetto Fellows State Scholarship** — **Clemson University**
Maintained GPA requirements for highest level of in-state scholarship (SC)

EXPERIENCE

2/2022 - **Graduate Research Assistantship** — **Los Alamos National Laboratory / Clemson University**
- Collaborated on project to develop machine learning model to predict trajectories of line defects in crystalline materials.
- Lead the initiative to bridge computational scales through automation programming.

`Python / C++`

5/2021 - 8/2021 **Undergraduate Research Assistant** — **Clemson University**
- Sampled KMC simulations to gather statistics on local material concentration within a doped metallic crystal.
- Drafted manuscript detailing research practice and results. Awaiting advisor approval for submission to academic journal.

`Python / Excel`

5/2019 - 1/2021 **Manufacturing Engineer CO-OP** — **Komatsu America Corp.**
- Completely remapped entire floor plan and facilitated restructuring of assembly areas.
- Developed active data-tracking workflow to automatically capture manufacturing process time.

`AutoCAD / SolidWorks / Excel`

LANGUAGES

English - Native, **Spanish** - B1