MIGUEL A. MORENO T.

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EDUCATION

Boston University (BU), Boston, MA — Sep. 2022- Present
Ph.D. in Mechanical Engineering

University of Nebraska-Lincoln (UNL), Lincoln, NE
Bachelor of Science in Mechanical Engineering — Jan. 2018- May 2022
Minor: Mathematics; GPA: 3.72/4.00

PROFESSIONAL EXPERIENCE

Materials Informatics Lab- BU — Jan. 2023- Present

- Performing electronic structure calculations using VASP for surface environments of high entropy alloys under various conditions.
- Building physically informed machine learning models based on these calculations to find new material systems for catalytic reaction design.

Nanoscale Energy Transport Research- UNL — Aug. 2020- May 2022

- Developed practical and versatile LabView VIs that will serve as the backbone for research in Near-field radiation, thermionic converters, and thermal transport via rarified gas.
- Increased knowledge through research and actively participate in the development of experimental procedures and writing academic papers.

Teaching Assistant- Computer Science Department- UNL — Aug. 2020- May 2022

- Supported the instructor for MATLAB in the development of coursework and grading.
- Directed students in the execution of assignments, projects, and lab exercises related to the class and served as guidance throughout the semester.

Data-Driven Model for Prediction of Radiative Characteristics - UNL — June 2020- May 2021

- Utilized advanced equipment like Keyence Laser Scanning Microscope, FEI Quanta 200, and FEI Helios to analyze microstructures and radiative properties of materials.
- Investigated and studied novel applications, materials, and theories in the field of passive radiative cooling.
- Presented research development in poster presentations and/or science fairs as part of the John Woollam Scholarship. Part of a research publication.

PROJECTS

Polymer-based Passive Radiative Cooler — Sep. 2021- May 2022

- Conducted a literature review on sustainable passive radiation using polymer-based devices for daytime cooling.
- Designed a radiative device for water cooling using a cellulose-based film designed in-house.

Engineering Summer Graduate Research Fair — June 2021

- Analyzed and collected data on laser-fabricated aluminum microstructures to train a machine-learning model that predicts radiative characteristics based on laser parameters.
- Exhibited research work done to students, alumni, professors, and judges.

HONORS AND ACHIEVEMENTS

Distinguished Mechanical Engineering Fellowship- BU — Sep. 2022- Present
Milton E. Mohr Research Scholarship- UNL — Aug. 2020- May 2022
Karen Stelling Scholarship- UNL — Aug. 2020- May 2022
John Woollam Research Scholarship- UNL — Aug. 2020- May 2022
University Honors Program- UNL — Aug. 2020- May 2022
Dean's List- UNL — May 2018- May 2022
Global Excellency Scholarship- UNL — Jan. 2018- May 2022

SKILLS

Programming Languages: MATLAB, Python, Julia, Labview.
CAD Software: AutoCAD, SolidWorks, Fusion 360.
Languages: Spanish (Native), German (Upper-intermediate).