THOMAS HOSMER

+1(949) 257-7638 ⋄ Berkeley, CA

tommyhosmer@berkeley.edu ⋄ www.linkedin.com/in/thomas-hosmer

EDUCATION

Doctor of Philosophy in Mechanical Engineering, University of California, Berkeley — 2023 - Present
GPA: 3.93

Bachelor of Science in Environmental Engineering Science, University of California, Berkeley — 2019 - 2023
GPA: 3.64

EXPERIENCE

Graduate Student Researcher — Aug 2023-Present
Multiphysics Simulation and Optimization Lab — *Berkeley, CA*

- Conducting research under Dr. Tarek Zohdi in the fields of computational science and design optimization
- Research Topic: Informative Path Planning for Mapping Dynamic Adversarial Populations
- Gaussian Processes and Level Set Estimation to track population modeled by stochastic differential equations

Graduate Student Researcher — May 2024-Dec 2024
Lawrence Livermore National Laboratory — *Livermore, CA*

- Subcontractor for Center for Applied Scientific Computing and Polymath Research Inc. on an ARPA-E funded project to develop model order reduction techniques of 1D-1V Vlasov-Poisson solvers for fusion research
- Managed dozens of terabytes of data from generation to reduction via FFT and dynamic mode decomposition
- Explored long-term phenomena in two-stream instabilities and KEEN waves to 4000 ipf

Graduate Student Instructor — Jan 2024 - May 2024
UC Berkeley Mechanical Engineering Department — *Berkeley, CA*

- Lead Teaching Assistant for graduate level mechanical engineering course of 50 students
- Responsible for design of 7 coding projects and final exam, leading discussion sections, and holding office hours
- Substituted as lecturer on multiple occasions when professor was unable to attend

Mechanical Project Engineer Intern — May 2023 - Aug 2023
TAE Technologies — *Foothill Ranch, CA*

- Assembled multi-component test stand and a data acquisition system for thermomechanical analysis
- Conducted and collected data for 50+ experiments to quantify flow and heat transfer performance
- Post-processed 10000+ data points in Excel and Python to guide further design of experiment

PROJECTS

Senior Thesis Digital Twin and Machine Learning Frameworks for Control of Data Center Energy Management Systems. **Keywords**: Genetic Algorithms, Neural Networks, Model Order Reduction, Energy Management Systems

Numerical Linear Algebra Low-Rank Approximation for Convolutional Layers in Super Resolution Applications. **Keywords**: Singular Value Decomposition, Canonical Polyadic Decomposition, Convolutional Neural Networks

Pedagogy 16 page educational guide to serve as an introduction to deep learning for beginning programmers. Published on the website of [AI Institute for Next Generation Food Systems](). **Keywords**: Deep Learning, Pedagogy

RELEVANT COURSEWORK

Numerical Solutions of Partial Differential Equations, Machine Learning Tools for Modeling Energy Transport, Numerical Linear Algebra, Continuum Mechanics, Computer Graphics [IP], Parallel Processing [IP]

SKILLS

Technical Skills	Genetic Algorithms, Computational Physics, Deep Learning, Data Visualization
Languages	Python, Julia, MATLAB, C/C++
Tools	TensorFlow, PyTorch, Keras, scikit-learn, pandas, NumPy, Matplotlib, HDF5