Arthur Feeney

☎ (512) 963 9124
afeeney@uci.edu
github.com/arthurfeeney

Interests

High Performance Computing and Hardware Aware Algorithm Design, Machine Learning for Science

Education

University of California Irvine 2022 - Present
Ph.D. in Electrical Engineering and Computer Science
Advisor: Aparna Chandramowlishwaran

University of Massachusetts Amherst 2021
M.S. in Computer Science

Trinity University, San Antonio, TX 2019
B.S. with Honors in Computer Science; Minor in Math

Experience

Sandia National Laboratories, Albequerque, NM May 2024 - Present
Computing Research Intern

Amazon, Austin, TX
Software Development Engineer Jul 2021 - Jul 2022
Software Development Engineer Intern Jun 2020 - Sep 2020

Numerical Algorithms Group (NAG), Houston, TX Sep 2020 - May 2021
High Performance Computing Intern

Publications

Authors who made equal contributions are denoted with †

- [IEEE TCAD] Wael Faetnassi, **Arthur Feeney**, Aparna Chandramowlishwaran, and Yasser Shoukry. 2024. BERN-NN-IBF: Enhancing Neural Network Bound Propagation Through Implicit Bernstein Form and Optimized Tensor Operations. In *IEEE Transactions on Computer-Aided Design.*
- [NeurIPS 2023 Spotlight] Sheikh Md Shakeel Hassan†, **Arthur Feeney**†, Akash Dhruv, Jihoon Kim, Youngjoon Suh, Jaiyoung Ryu, Yoonjin Won, and Aparna Chandramowlishwaran. 2023. BubbleML: A Multiphysics Dataset and Benchmarks for Machine Learning. In *the Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track.*
- [SC 2023] **Arthur Feeney**†, Zitong Li†, Ramin Bostanabad, and Aparna Chandramowlishwaran. 2023. Breaking Boundaries: Distributed Domain Decomposition with Scalable Physics-Informed Neural PDE Solvers. In *The International Conference for High Performance Computing, Networking, Storage, and Analysis.*
- **Arthur Feeney**†, Rishabh Gupta†, Veronika Thost, Rico Angell, Gayathri Chandu, Yash Adhikari, and Tengfei Ma. 2020. Relation-Dependent Sampling for Multi-Relational Link Prediction. In *ICML 2020 Workshop on Graph Representation Learning and Beyond.*

Awards

UC Irvine

- UCI–LANL–SoCal Hub Research Fellowship 2024-2025
- Henry Samueli Endowed Fellowship 2022-2023

Trinity University

- Outstanding Senior Research: given to a Senior with a distinguished record of C.S. research 2019

- Murchison Fellowship: one of twenty recipients for summer research at Trinity University 2018
- Martin Lange Prize: for getting the highest grade in Principles of Computer Science Theory 2018
- HEP Summer Fellowship: granted by the Computer Science Department for summer research 2017
- Trustee's Scholarship: four year academic merit scholarship awarded by Trinity University 2015

Teaching Experience

University of California Irvine
Teaching Assistant for Fundamentals of Parallel Computing Spring 2023

University of Massachusetts Amherst
Grader for Advanced Algorithms Fall 2020

Trinity University
Teaching Assistant for Data Structures Spring 2019

Talks

Note, these are "abstract-only"

- **Arthur Feeney** and Aparna Chandramowlishwaran. 2024. Domain Decomposition Methods for Neural PDE Solvers. In *SIAM Conference on Parallel Processing for Scientific Computing* (PP24).
- Akash Dhruv, Shakeel Hassan, **Arthur Feeney**, Aparna Chandramowlishwaran, and Anshu Dubey. 2023. Scientific Machine Learning Workflows for Phase-Change Heat Transfer Applications. In *Bulletin of the American Physical Society: 76th Annual Meeting of the Division of Fluid Dynamics*.
- **Arthur Feeney**, Youngjoon Suh, Jihoon Kim, Akash Dhruv, Shakeel Hassan, Jaiyoung Ryu, Aparna Chandarmowlishwaran, and Yoonjin Won. 2023. Scientific Machine Learning for Extrapolating Temperature Information. In *the Conference on Micro Flow and Interfacial Phenomena* (MicroFIP 2023).