C Thomas

(they/them)

🔗 Website   in Linkedin   ◉ GitHub   G Scholar   ✉ email   📍 SF Bay Area

Professional Summary

Forward-thinking and resourceful scientist and technical leader. Currently leading a machine learning team at Apple that translates advances in research to applications in manufacturing. I value research and tool development equally, and all research successes are developed and merged to a well-used library, with impact measured across Apple.

Skills

- Experimental science
- Deep learning
- R&D leadership
- Org strategy
- People leadership
- Technical communication

Experience

Apple   Cupertino, CA

Applied Research Manager, Machine Learning   2022 – current

- Built R&D team within Apple Operations, own team mission and vision, set measurable quarterly goals and demonstrate factory impact via improvements to model performance, data efficiency and compute efficiency.

- Drive collaborations with academic and internal researchers, targeting current and future challenges in manufacturing ML. Recent successes reduce data collection and annotation requirement by 30% in images and up to 90% in test sampling.

- Work with directs to identify their career goals and a growth plan at the intersection of their goals and our team mission.

Machine Learning Engineer   2020 – 2022

- Built and deployed vision models to the factory floor; identified a major source of manufacturing error before it impacted customer with significant financial impact.

- Implemented flexible, generalized automation in model training, now used by all Ops vision MLEs. Included experiment tracking and dataset versioning for performance improvement and up to 80% time savings in urgent model updates.

- Mentored interns and junior ICs in collaborative code development, research decisions, and interpreting results.

Tua Fertility Founder

- Designed and prototyped medical devices as a startup in residence at the San Francisco Autodesk Technology Center.
- Developed and pursued organizational and technical milestones, conducted user research, collaborated with fertility center to identify challenges and assess competitive landscape

Oakland, CA
2019 - 2020

Rigetti Computing Senior Research Engineer & Tech Lead

- Aligned engineering teams so that subsystem improvements (fabrication, cryogenic, mechanical and electrical) fit together to improve end-user experience of the quantum computer.
- Started and hired the technical program management team. Supported hiring over 30 engineers in high growth period.

Berkeley, CA
2017 – 2019

University of California, Berkeley Doctoral Research Fellow

- Built laser and ultra high vacuum systems to trap and cool individual atoms, achieving some of the coldest temperatures in the universe, to study the simplicities and complexities of quantum physics.
- Identified and developed a predictive white box model to explain an unexpected asymmetry in absorption image data (2D, grayscale images).
- Developed and tested a mean-field model predicting the critical point of the phase transition in atomic samples that includes the impact of lattice geometry.

Berkeley, CA
2010 – 2017

Education

PhD   **University of California at Berkeley**, Atomic and Optical Physics
       Quantum simulation of triangular, honeycomb and kagome crystal structures using ultracold atoms in lattices of laser light

MA   **University of California at Berkeley**, Physics

BA   **Boston University**, Physics and Math

Select Publications

LangDA: Language-guided Domain Adaptive Semantic Segmentation Chang Liu, Saad Hossain, *C Thomas*, Kwei-Herng Lai, Raviteja Vemulapalli, Sirisha Rambhatla, Alexander Wong NeurIPS 2024, AFM workshop ⧉

Nov 2024

Synth4Seg–Learning Defect Data Synthesis for Defect Segmentation using Bi-level Optimization Shancong Mou, Raviteja Vemulapalli, Shiyu Li, Yuxuan Liu, *C Thomas*, Meng Cao, Haoping Bai, Oncel Tuzel, Ping Huang, Jiulong Shan, Jianjun Shi arXiv:2410.18490 ⧉

Oct 2024

Mean-field scaling of the superfluid to Mott insulator phase transition in a 2D optical superlattice *CK Thomas*, Thomas H Barter, Tsz-Him Leung, Masayuki Okano, Gyu-Boong Jo, Jennie Guzman, Itamar Kimchi, Ashvin Vishwanath, Dan Stamper-Kurn Physical Review Letters, editor's suggestion ⧉

Sept 2017

Volunteering

Impact Bay Area Board member and assistant instructor

SF Bay Area
2017 - current

- Training students in self-defense under adrenaline.

Tools

Languages: Python, C++

Technologies: PyTorch, Tensorflow, HuggingFace, Voxel, Git