

C Thomas

(they/them)

[Website](#) [in LinkedIn](#) [GitHub](#) [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. My applied research focuses on continual learning, domain generalization, and data-efficient machine learning. I am also interested in hierarchical learning and mechanistic interpretability of large language and multimodal models.

Skills

- Experimental science
- R&D leadership
- People leadership
- Deep learning
- Strategic planning
- Technical communication

Experience

Apple

Cupertino, CA
2022 – current

Applied Research Manager, Machine Learning

- Launched R&D team within Ops ML, includes creating team mission and vision, setting measurable quarterly goals and demonstrating improvements to model performance and development time.
- Initiate and drive collaborations with academic and internal researchers, targeting current and future challenges in manufacturing ML. Recent successes reduced new data required for similar models by 30% in images and up to 90% in test sampling. NSERC grant awarded.
- 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 training flow, 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 FounderOakland, CA
2019 - 2020

- 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

Rigetti Computing Senior Research Engineer & Tech LeadBerkeley, CA
2017 – 2019

- 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.

University of California, Berkeley Doctoral Research FellowBerkeley, CA
2010 – 2017

- 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.

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**, PhysicsBA **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

- Training students in self-defense under adrenaline.

SF Bay Area
2017 - current

Tools

Languages: Python, C++

Technologies: PyTorch, Tensorflow, HuggingFace, Voxel, Git