github.com/hetankevin
kevtan@wharton.upenn.edu

Resume

Kevin Tan

Graduate Program:
Statistics Ph.D.

Education

Ph.D. Student, Statistics and Data Science **2023 - 2027**
The Wharton School, University of Pennsylvania GPA: 3.91/4.00
Bachelor of Science **2019 - 2023**
University of Michigan, Ann Arbor GPA: 3.89/4.00
Majors: Quadruple major in Statistics, Honors Mathematics, Economics, Data Science
Highest Honors in Statistics, Honors in Mathematics

Publications

*: Equal contribution

1. **Learning Mixtures of Markov Chains and MDPs**.
   Chinmaya Kausik, Kevin Tan, Ambuj Tewari *ICML 2023, Short Oral Presentation*
2. **Offline Policy Evaluation and Optimization under Confounding**
   Kevin Tan, Yangyi Lu*, Chinmaya Kausik*, Yixin Wang, Maggie Makar, Ambuj Tewari* *AISTATS 2024*
3. **Informing Policy via Dynamic Models: Cholera in Haiti**
   Jesse Wheeler, Anna Rosengart, Zhuoxun Jiang, Kevin Tan, Noah Treutle, Edward Ionides *PLOS Comp Bio*
4. **A Natural Extension To Online Algorithms For Hybrid RL With Limited Coverage**
   Kevin Tan, Ziping Xu** *Reinforcement Learning Conference 2024*
5. **Hybrid RL Breaks Sample Size Barriers in Linear MDPs**
   Kevin Tan, Wei Fan, Yuting Wei *NeurIPS 2024*
6. **Distributed Least Squares in Small Space via Sketching and Bias Reduction**
   Sachin Garg, Kevin Tan, Michał Dereziński *NeurIPS 2024*
7. **Leveraging Offline Data in Linear Latent Bandits**
   Chinmaya Kausik, Kevin Tan, Ambuj Tewari *ICML 2025*
8. **Actor Critics Can Achieve Optimal Sample Efficiency**
   Kevin Tan, Wei Fan*, Yuting Wei* *ICML 2025*

Preprints and Working Papers

1. **Automatic Differentiation Accelerates Inference for Partially-observed Markov Processes** R&R, JRSS-B
   Kevin Tan, Giles Hooker, Edward L. Ionides

Work Experience

Applied Scientist Intern **Summer 2025**
Amazon

- Developing physics-informed behavior cloning models to analyze worker decision-making and improve warehouse throughput.
- Providing guidance on using reinforcement learning and online learning methods as alternatives to traditional optimization, to accelerate inference in production.

Machine Learning Research Engineer **Winter 2023, Summer 2023**
Shade Inc.

- Developed various AI/ML products, including a text-audio search engine powered by multimodal embeddings, a similar search engine for 3D textures, jersey number recognition, fast online face clustering for facial recognition, lightweight asset description generation from a small set of tags, and an assortment of deep classifiers.
- Devised a framework for fast and lightweight fine-tuning of embeddings for large multimodal models.
- Oversaw a team that distilled BLIP, speeding up inference by over 7 times while maintaining performance.

Multi-asset, Mass Customized Solutions Intern **Summer 2020, 2021**
Schroders

- Designed and developed an engine prototype for a digital multi-asset retirement and investment solution.
- Devised a recommendation algorithm for personalized user portfolios, via solving a sparse optimization problem with knapsack search heuristics, achieving portfolios 90% sparser than before and reducing unnecessary trades by 87%.

Lieutenant **2017-2018**
Singapore Armed Forces, 18th Divisional Air Defence Battalion

- Air warfare officer in ground-based air defence, trained on a V-SHORAD system and short-ranged radar.
- Acted in a leadership capacity by spearheading projects, mentoring personnel, and communicating with external agencies as a staff officer in the battalion's intelligence cell.

Open Source Software

`pypomp`

- Wrote the core engine behind a Python package for filtering through and training highly nonlinear and non-Gaussian state-space models. The package features a new training algorithm and gradient estimates for the particle filter.
- Achieved a 16x speedup over the `pomp` R package through just-in-time compilation and GPU acceleration.

Skills and Interests

Programming Python, R, C++, SQL, Git, JavaScript, Matlab.
Skills PyTorch, Tensorflow, Keras, JAX, PyMC3, Pandas, NumPy, SciPy, Scikit-Learn, Matplotlib, Tidyverse, Caret, ShinyDashboard, Gurobi, CVXPY, Slurm, Aladdin, Google Data Studio.
Interests Building earphones, building guitars, cooking, baking.