

Thomas Y.L. Lin

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EDUCATION

University of Washington

B.S. in Physics, Minor in Applied Math; GPA: 3.99

Seattle, WA, USA

2025 – 2027 (expected)

National Taiwan University

B.S. in Physics, B.A. in Economics

Taipei, Taiwan

2023 – 2025 (transferred)

Honors: Dean's List Award (Physics Dept., 1st Rank, Fall 23 & Spring 25); BaBar-SURF Award (one of 8 awardees)

EXPERIENCE

MediaTek

San Jose, CA, USA

Research Intern

June 2026 – Present

- Developing a multi-physics (electrical-thermal-optical) chip emulator for inverse design and model-predictive control.
- Initiated the project by pitching the Chairman directly, securing funding and access to proprietary ASIC data.

California Institute of Technology

Pasadena, CA, USA

Summer Undergraduate Research Fellowships (SURF)

March 2025 – January 2026

- Developed Decoupled Diffusion Inverse Solver (DDIS), a physics-aware, data-efficient generative framework for PDE inverse problems, decoupling coefficient prior learning from physics enforcement.
- Proved a guidance-attenuation failure mode in prior joint-embedding models under limited data, justifying our design.
- Achieved SOTA with 1% paired data, improving reconstruction error by 11% (L2) and 54% (spectral) over prior best solvers on inverse Helmholtz, Poisson, and Navier–Stokes problems.
- Advised by Prof. Anima Anandkumar and PhD student Jiachen Yao.

Northwestern University

Remote

Machine Learning Intern

April 2023 – April 2025

- Analyzed the fine-grained complexity of modern Hopfield models; designed approximation algorithms reducing time complexity from subquadratic to near-linear (ICML 2024).
- Built a latent Bayesian network for portfolio optimization — a data-driven Black-Litterman model learning investor views as latent variables (ICML 2025).
- Advised by Prof. Han Liu and PhD candidate Jerry Yao-Chieh Hu.

Gamma Paradigm Capital

Taipei, Taiwan

Quantitative Analyst Intern

June 2023 – July 2024

- Implemented Distributionally Robust Optimization portfolio strategies ([Blanchet, Chen, and Zhou, 2022](#)) across 11 sectors (2006–2023): Sharpe [0.68, 0.78], MDD [-18.4%, -27.1%] vs. SPY (0.55, -55.2%) and EQW (0.54, -37.2%).
- Built a data-driven Black-Litterman model: +49.8% Sharpe over Markowitz (0.66–0.87 vs. 0.35–0.62) and S&P 500 / DJIA on 20- and 30-year data; 55.1% lower turnover, robust to hyperparams. Spun out into research with Northwestern.

PUBLICATIONS

Decoupled Diffusion Sampling for Inverse Problems on Function Spaces

Thomas Y.L. Lin*, Jiachen Yao*, Lufang Chiang, Julius Berner, Anima Anandkumar.

Oral, AI & PDE Workshop @ ICLR 2025. [ArXiv Link](#).

Latent Variable Estimation in Bayesian Black-Litterman Models

Thomas Y.L. Lin, Jerry Yao-Chieh Hu, Paul W. Chiou, Peter Lin.

ICML 2025. [ArXiv Link](#).

On Computational Limits of Modern Hopfield Models: A Fine-Grained Complexity Analysis

Jerry Yao-Chieh Hu*, Thomas Lin*, Zhao Song, Han Liu. *Equal Contribution

ICML 2024. [ArXiv Link](#).

ACHIEVEMENTS & LEADERSHIP

European Physics Olympiad (EuPhO) – Bronze Medalist

Ljubljana, Slovenia | May 2022

- Fundraised \$14,000 for Taiwan's olympiad participation from companies, foundations, and government.

Y Combinator AI Startup School — Invitee

San Francisco, CA, USA | June 2025

- Selected to attend YC's exclusive AI Startup School with airfare grants.

Harvard Undergraduate in Asia Program (HUAP) NTU Branch – PR Member

Taipei, Taiwan | 2024–25

- Fundraised a record \$4,500 (4 deals) — 97% of the 7-member PR team's total.
- Hosted Harvard undergraduate students in March 2025 for HUAP's Spring Conference at NTU.

Conference Reviewer

2026

- NeurIPS 2026, ICLR 2026 (AI & PDE Workshop), ICML 2026 (AI4Science Workshop).

SKILLS & INTERESTS

Research: Neural Operators, Generative Models, Statistical Learning, AI for Science, World Models, Control Theory

Technical: Python (PyTorch, Pandas, NumPy, scikit-learn, Statsmodels, Matplotlib, Hiplot), CUDA, Gurobi, MATLAB