Yinan Li

Tucson, AZ | yinanli@arizona.edu | Google Scholar | LinkedIn

EDUCATION

University of Arizona — Tucson, AZ
Ph.D. in Computer Science; minor in Applied Mathematics — Expected 2027
Advisor: Prof. Kwang-Sung Jun (since 2024)

Fordham University, Gabelli School of Business — New York, NY
M.S. in Quantitative Finance — 2020

Nankai University — Tianjin, China
B.S. in Mathematics and B.S. in Economics — 2018

PUBLICATIONS AND PREPRINTS

Halve-Then-Greedy: Adaptive Sampling for Posterior Success with Near-Optimal Instance Dependence
Yinan Li, Kwang-Sung Jun, Kapilan Balagopalan, Tuan Nguyen, Yao Zhao, Abbas Zaidi, Houssam Nassif
Under review, 2026

Sign Betting for Misspecified Regression: Variance Adaptivity and Optimal Approximation
Yinan Li, Han Han, Kwang-Sung Jun
Under review, 2026

ε-Good Action Identification in Fixed-Budget Monte Carlo Tree Search
Yinan Li, Tuan Nguyen, Kwang-Sung Jun
Advances in Neural Information Processing Systems (NeurIPS), 2026

Fixed Budget is No Harder Than Fixed Confidence in Best-Arm Identification up to Logarithmic Factors
Kapilan Balagopalan*, **Yinan Li***, Yao Zhao, Tuan Ngo Nguyen, Anton Daitche, Houssam Nassif, Kwang-Sung Jun
International Conference on Machine Learning (ICML), 2026

Second-Order Bounds for $[0, 1]$-Valued Regression via Betting Loss
Yinan Li, Sungjoon Yoon, Ethan Huang, Kwang-Sung Jun
Conference on Learning Theory (COLT), 2026

Efficient Active Learning Halfspaces with Tsybakov Noise: A Non-convex Optimization Approach
Yinan Li, Chicheng Zhang
International Conference on Artificial Intelligence and Statistics (AISTATS), 2024

Improved Algorithms for Efficient Active Learning Halfspaces with Massart and Tsybakov Noise
Chicheng Zhang, **Yinan Li**
Conference on Learning Theory (COLT), 2021

*Equal contribution.

SELECTED RESEARCH PROJECTS

Fixed-Budget Tree Search and Best-Arm Identification NeurIPS 2026 · ICML 2026

- Designed an ε-agnostic algorithm for ε-good max–min action identification in depth-two Monte Carlo tree search; established the first known fixed-budget guarantee for this setting, with instance-dependent exponential error bounds capturing both across-subtree and within-subtree gaps.
- Co-developed a general reduction from fixed-confidence to fixed-budget best-arm identification, preserving sample complexity up to logarithmic factors and improving guarantees for several structured best-arm identification problems.

Variance-Adaptive and Misspecification-Robust Regression COLT 2026 · arXiv 2026

- Introduced betting loss for bounded regression; proved high-probability second-order generalization bounds that adapt to the average conditional label variance without requiring prior variance estimates.
- Introduced sign-betting regression under model misspecification, establishing high-probability variance-adaptive L_1 oracle inequalities; characterized the optimal universal approximation factor of 3 for proper learning.
- Applied sign betting to model selection among 35 LLM reward models; achieved lower test mean absolute error than squared-loss and log-loss selection baselines.

Bayesian Adaptive Experimentation arXiv 2026 · Collaboration with Meta

- Developed Halve-Then-Greedy for fixed-budget Bayesian experimentation that combines modified successive halving and posterior-greedy allocation to maximize the probability of meeting a posterior credibility threshold for a recommended design.
- Proved instance-dependent exponential bounds on posterior-certification failure and near-optimal sample complexity (up to logarithmic factors) for one-positive-arm families; demonstrated sample-efficiency gains in simulations.

Efficient Active Learning under Label Noise AISTATS 2024 · COLT 2021

- Developed computationally efficient active learning algorithms for halfspaces under Massart and Tsybakov noise, combining online-learning techniques and nonconvex optimization; established improved label-complexity guarantees under structured data distributions.

TECHNICAL SKILLS

Programming: Python, C++ **ML and Optimization:** PyTorch, Hugging Face, scikit-learn, Gurobi

Tools: Git, LaTeX

SELECTED HONORS AND AWARDS

NeurIPS 2026 Travel Grant	2026
Graduate College Fellowship, University of Arizona	2026
Galileo Circle Scholarship, University of Arizona	2026
Outstanding Graduate in Service, University of Arizona	2024

PROFESSIONAL SERVICE AND TEACHING

Reviewer: NeurIPS (2023–2026), ICLR (2024–2027), ICML (2024–2025), AISTATS (2025–2027), COLT (2026).

Teaching Assistant: Principles of Machine Learning, Algorithms, Data Science, and Theory of Computation (University of Arizona).

Leadership: Diversity, Equity, and Inclusion Officer, Department of Computer Science, University of Arizona (2024–2026).