Yue Yu

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EDUCATION

Indiana University — Bloomington, IN
Ph.D. in Statistical Science & M.S. in Computer Science—Advisor: Prof. David Crandall — *Dec. 2026 (Expected)*

University of Michigan — Ann Arbor, MI
M.S. in Applied Statistics—Advisor: Prof. Ji Zhu — *May 2020*

Sun Yat-sen University — Guangzhou, China
B.E. in Theoretical & Applied Mechanics, with Minor in Statistics — *Jun. 2018*

SELECTED PUBLICATIONS

On the Limits of Test-Time Compute: Sequential Reward Filtering for Better Inference
__Yue Yu__, Qiwei Di, Quanquan Gu, Dongruo Zhou — *Under Review of ICRL 2026*

Sample and Computationally Efficient Continuous-Time Reinforcement Learning with General Function Approximation
Runze Zhao*, __Yue Yu*__, Adams Yiyue Zhu, Chen Yang, Dongruo Zhou — *UAI 2025*

SELECTED PROJECTS

Group-Concatenated RL Fine-Tuning for LLMs | *Project Leader* — *Aug. 2025 – Present*
- Designed novel RL fine-tuning algorithm improving sample efficiency by 20% for LLM reasoning tasks, reducing training costs while maintaining high accuracy on mathematical and logical reasoning benchmarks
- Built evaluation pipeline using vLLM and VERL for distributed training, achieving 5% higher accuracy on MATH and improved training stability across 100+ diverse reasoning tasks

Reward-Filtered Test-Time Compute for LLMs | *Project Leader* — *Mar. 2025 – Sept. 2025*
- Developed inference-time optimization reducing LLM serving costs by 30% while improving reasoning accuracy by up to 20%, enabling cost-effective deployment of complex problem-solving AI systems
- Conducted large-scale evaluation across 10K+ test cases with multiple model families (Qwen3, GPT-5) and verification methods, demonstrating robust performance improvements across various science Q-A benchmarks

Computationally Efficient Continuous-Time RL | *Project Co-Leader* — *Jul. 2024 – Feb. 2025*
- Achieved state-of-the-art sample and computational efficiency (50+% improvement) in continuous control and diffusion fine-tuning tasks by developing a model-based continuous-time reinforcement learning (CTRL) algorithm
- Demonstrated comparable or superior performance with substantially fewer policy updates and rollouts, validated through extensive benchmarking against Guidance, Online PPO, Non-adaptive and Ensemble ODE baselines

Michigan Pharmacy Fraud Analysis | *Lab Project Member* — *May. 2020 – Dec. 2020*
- Performed feature engineering and data pre-processing (e.g., dimension reduction, exploratory data analysis, missing data imputation) and improved traditional ML performance by developing positive–unlabeled learning models such as one-class SVM and Isolation Forest, achieving 0.88 AUC
- Delivered an engaging and comprehensive presentation on explainable, well-performed statistical models and visualized data for the Office of the Inspector General of the Michigan State Government

SELECTED PROFESSIONAL EXPERIENCE

SAS Programmer I
Baim Institute for Clinical Research — *Nov. 2020 – Jun. 2021*
- Built automated statistical analysis pipelines processing 10K+ patient records across 5+ cardiovascular trials, reducing analysis time from weeks to days through optimized SAS macro programming
- Developed GLMs, survival models, and mixed-effects models collaborating with biostatisticians and clinicians for FDA regulatory submission standards

TECHNICAL SKILLS

Machine Learning/Artificial Intelligence: PyTorch, vLLM, Transformers, Diffusers, Keras, scikit-learn
Programming Languages: Python, R, C++, SQL, MATLAB, FORTRAN
Tools: Git, NumPy, pandas, Matplotlib, Jupyter, Wandb, LaTeX