

Rosen Ting-Ying Yu

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Education

Massachusetts Institute of Technology (GPA: 5.0/5.0)

2023 – Present

- PhD student in Computational Science & Engineering (2028 anticipated)
- Master of Science in Computational Science and Engineering (May 2025)

Georgia Institute of Technology

2019 – 2023

- B.S. in Electrical Engineering
- Minor in Computer Science (Artificial Intelligence) & Earth and Atmospheric Science (Geophysics)

Graduate Research Experience

MIT Design Computation and Digital Engineering (DeCoDE) Lab

2023 – Present

GRADUATE RESEARCH ASSISTANT (ADVISOR: PROF. FAEZ AHMED)

Cambridge, MA

- Pioneering [tabular foundation models](#) + [Bayesian optimization](#) with x200 speedup & SOTA accuracy.
- Investigating in deep learning algorithms for [high-dimensional optimization and regression](#) settings.
- Developing [synthetic data generation](#) pipelines that resemble field-specific data for foundation model training.
- Administrating lab's [high-performance computing cluster](#) with 20+ NVIDIA A100, H100, and H200 nodes.

Peer-Reviewed Conference Publications

C1. FIRE: Multi-fidelity Regression with Distribution-conditioned In-context Learning using Tabular Foundation Models. **Rosen Ting-Ying Yu**, Nicholas Sung, and Faez Ahmed. (2026). *ICLR 2026 Workshop on Foundation Models for Science (FM4Science)*.

C2. GIT-BO: High-Dimensional Bayesian Optimization with Tabular Foundation Models. **Rosen Ting-Ying Yu**, Cyril Picard, and Faez Ahmed. (2026). *ICLR 2026, International Conference on Learning Representations*.

C3. TabPFN-2.5: a Preview. Leo Grinsztajn, Klemens Flöge, Oscar Key, Adrian Hayler, Mihir Manium, Anurag Garg, Jake Robertson, Shi Bin Hoo, Felix Birkel, Philipp Jund, Benjamin Jäger, **Rosen Ting-Ying Yu**, Bernhard Schölkopf, Noah Hollmann, Frank Hutter. (2025). *EurIPS Workshop AI for Tabular Data*.

Selected Journal Publications

J1. Fast and Accurate Bayesian Optimization with Pre-trained Transformers for Constrained Engineering Problems. **Rosen Ting-Ying Yu**, Cyril Picard, and Faez Ahmed. (2025). *Structural and Multidisciplinary Optimization*.

Selected Research Presentations

P1. GIT-BO: High-Dimensional Bayesian Optimization with Tabular Foundation Models (2026). *ICLR 2026*, Rio de Janeiro, Brazil. Poster

P2. GIT-BO: High-Dimensional Bayesian Optimization with Tabular Foundation Models (2025). *International Design Engineering Technical Conferences*, Anaheim, CA. Talk

P3. GIT-BO: High-Dimensional Bayesian Optimization with Tabular Foundation Models (2025). *ICML 2025 International Conference on Machine Learning Foundation Model for Structured Data Workshop*, Vancouver, Canada. Poster

- P4.** High-Dimensional Bayesian Optimization with Pre-trained Transformers (2024). *iNCMDAO International & National Conference on Multidisciplinary Design, Analysis and Optimization*, Bengaluru, India. Talk
- P5.** Pre-trained Transformers for Constrained Bayesian Optimization (2024). *International Design Engineering Technical Conferences*, Washington, DC. Talk
- P6.** Monitoring CO₂ Plume with Sequential Bayesian Inference (2022). *ML4Seismic Industry Partners Meeting*, Atlanta, GA. [Project Page](#). Talk

Honors and Awards

- 2025 The CCSE College of Computing Graduate Fellowship, MIT. [News article](#).
- 2024 Best Paper (Special Mention), iNCMDAO Conference.
- 2023 Top viewed article, *Journal of Geophysical Research: Planets*.
- 2023 Graduated with Highest Honor with Georgia Tech Dean's list (9x), Georgia Tech.
- 2022 ThinkSwiss Research Scholarship, Embassy of Switzerland.
- 2020, 2022 President's Undergraduate Research Awards, Georgia Tech.

Industry Experience

Prior Labs

RESEARCH SCIENTIST INTERNSHIP (1ST INTERN HIRED BY PRIOR LABS) 2025
Freiburg, Germany

- Optimized tabular foundation model finetuning for regression and classification, reducing 30% prediction error.
- Contributed to two trending GitHub repos: [TabPFN](#) and [TabPFN time series](#) (2.5M+ downloads).

Service

Reviewing

- **Journals:** Computer-Aided Design (1×) and Mechanical Systems and Signal Processing (1×).
- **Conferences:** ICLR 2026 Workshop on Foundation Models for Science (2×)

Teaching & Advising

Teaching Assistant

MIT 2.086 NUMERICAL COMPUTATION FOR MECHANICAL ENGINEERS (2 SEMESTERS, 2024 & 2025) *Cambridge, MA*

- Developed homework and hosted office hours for MATLAB programming & computing. [Teaching Page](#).
- Co-led lab lectures on optimization and introduction to AI & ML (Statistics & Machine Learning Toolbox).

Undergraduate Research (UROP) Mentor

MASSACHUSETTS INSTITUTE OF TECHNOLOGY *Cambridge, MA*

- Supervised 2 MIT undergraduate researchers, scoping projects, guiding methods, and supervising analysis.

Skills

AI/ML	Generative Models, Deep Learning, AutoML, Multimodal ML, ML Fundamentals, RL, LLMs, Tabular foundation models
Programming	Python (PyTorch), MATLAB, Bash, Shell, Julia, C/C++, R, Java, Git, LaTeX, Gradio, Replit, HTML/CSS, React.js
Optimization	Heuristic Methods (Genetic Algorithms, Particle Swarm, etc.), Bayesian optimization, Gradient-based (SGD, BFGS, Adam, etc.)
Computing	Object-Oriented Programming (OOP), Data Structures & Algorithms, Parallel Computing, Numerical Methods
Software	AWS, Solidworks, AutoCAD, COMSOL, Ansys
Hardware	Soldering, Arduino, Raspberry Pi, ESP32/8266, Digilent Analog Discovery, ARM mbed, Sensing Systems, Power Systems (Basic), Digital Systems (Basic)
Mentoring	MIT CAPD Certification: Formal instruction and assessment in research mentoring methods
Languages	English (Advanced, 6+ years living in the US), Chinese (Native), Japanese (Beginner)