

Lennon Shikhman

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Education

Georgia Institute of Technology, Atlanta, GA Aug 2025 – May 2027
M.S. Computer Science Concentration: Machine Learning
Advisor: Dr. Bo Zhu

Florida Institute of Technology, Melbourne, FL Aug 2022 – Dec 2026
M.S. Applied Mathematics Emphasis: Applied Analysis
B.S. Applied Mathematics Minors: Physics, Computer Science

Selected Research

Journal and Conference Papers

3. **L. J. Shikhman**. *Semigroup Consistency as a Diagnostic for Learned Physics Simulators*. Proceedings of the AI4Physics Workshop at the 43rd International Conference on Machine Learning.
2. **L. J. Shikhman**. *Diagnosing Failure Modes of Neural Operators Across Classes of PDEs*. Transactions on Machine Learning Research.
1. **L. J. Shikhman**. *One Operator to Rule Them All? On Boundary-Indexed Operator Families in Neural PDE Solvers*. Workshop on AI & PDEs at the 14th International Conference on Learning Representations.

Invited Talks

1. **L. J. Shikhman**, L. Lawler. *Deploying Physics Models at the Edge: Quantized AI for Weather and Fluid Simulation*. Optimized AI Conference, 2026, Atlanta, GA.

Manuscripts Under Review

5. **L. J. Shikhman**, Y. Qian, H. Li. *Predicting Blood Clot Growth from Sparse Post-Onset Measurements with Latent Neural Differential Equations*. Under review in *Computer Methods and Programs in Biomedicine*.
4. **L. J. Shikhman**. *A Diagnostic Software Suite for Auditing Learned PDE Simulators*. Under review in *Computer Physics Communications*.
3. **L. J. Shikhman**, S. Gilbertie. *Cellular Sheaf Neural Operators for Structure-Preserving Surrogate Modeling of Constrained PDEs*. Under review in *Journal of Computational Physics*.
2. **L. J. Shikhman**. *Kernel-Robust Dynamics for Reaction–Diffusion Equations with Measure-Valued Delay*. Under review in *Nonlinear Differential Equations and Applications*.
1. **L. J. Shikhman**, M. Galarnyk, A. Dash, N. Welsh. *Inverse Learning of Latent Risk-Neutral Densities from Irregular Option Quotes*. Under review in the *40th Annual Conference on Neural Information Processing Systems*.

Research Support

Dell Technologies / Dell Pro Precision Ambassador Program Aug 2025 – Present
Sponsored by Dell for my research (by way of hardware support) valued at over \$35,000 to enable GPU-accelerated experimentation in scientific machine learning, neural operators, and physics-based AI.

Relevant Coursework

Mathematics: Real Analysis I, Linear Algebra, Functional Analysis, Numerical Analysis, Partial Differential Equations I, Mathematical Statistics 1/2, Linear Optimization, Nonlinear Optimization, Differential Geometry.
Computer Science: Machine Learning, Reinforcement Learning, Numerical Analysis, Scientific Computing.

Research Positions

Graduate Research Assistant

May 2026 – Present

Georgia Institute of Technology, Atlanta, GA

- Developed physics-informed methods for reconstructing unknown geometries and physical fields from sparse, noisy measurements, with uncertainty quantification for non-identifiable domains.
- Researched curvature-aware neural operators for geometry-aware simulation, incorporating surface geometry and irregular-domain information to improve generalization across complex physical domains.

Graduate Research Assistant

Florida Institute of Technology

Aug 2025 – May 2026

- Develop computational oncology pipelines using computer vision and hyperspectral imaging for tissue analysis, including spatial-spectral representation learning, inverse reconstruction, segmentation, and interpretable biomarker evaluation.
- Lead aerospace vision research for spacecraft and aircraft inspection, using vision-language models and open-set recognition to identify components and anomalies under distribution shift and limited supervision.

Industry Experience

Data Scientist Intern, FlexShopper

May 2025 – Aug 2025

- Designed and deployed real-time credit risk and fraud detection models (1M+ records), increasing annualized profit by approximately \$2M.
- Optimized production inference systems under strict latency constraints, achieving sub-millisecond execution.

Software Engineer Intern, VitaGlide

Jan 2025 – May 2025

- Led overhaul of a mobile application backend, redesigning core app architecture, modularizing reusable components, and introducing test-driven development with 90% unit test coverage.
- Implemented an AI-driven hands-free voice-command feature using on-device speech-to-text and wake-word detection, achieving sub-200 ms inference latency.

Teaching & Service

- **Teaching Assistant**, Deep Learning (MTH 5320, Graduate Level Course)

Florida Institute of Technology

Fall 2025

- **Tutoring**

- **Mathematics:** Calculus 1-3, Differential Equations, Partial Differential Equations, Linear Algebra
- **Physics:** Physics 1/2, Modern Physics, Quantum Mechanics, Statics, Dynamics
- **Computer Science:** Deep Learning, Machine Learning, Fundamentals of Software Development 1/2

- **Reviewer**

- Workshop on AI&PDEs at the 14th International Conference on Learning Representations.
- Workshop on AI4Physics at the 43rd International Conference on Machine Learning.
- Workshop on AI4Math at the 43rd International Conference on Machine Learning.