Subhamon Supantha

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Current Affiliation

Georgia Institute of Technology **2026–Present**
Ph.D. in Machine Learning
H. Milton Stewart School of Industrial and Systems Engineering

Education

Chennai Mathematical Institute **2023–2025**
Masters in Computer Science
Thesis: *A survey on the Neural Tangent Kernel: Theory, Application and Background*

University of Hyderabad **2020–2022**
Masters in Economics
Thesis: *A Dynamic Agent Based Model of the Real Economy*

Jadavpur University **2017–2020**
Bachelors in Economics

Awards and Scholarships

2026-2027: Received the *H. Milton Stewart Fellowship* ($11,736) at Georgia Tech.

March 2026: Received ***ALT 2026 Elegance Award*** for our paper *"Universal Dynamic Regret and Constraint Violation Bounds for Constrained Online Convex Optimization"*.

2023–2025: Full tuition waiver and monthly stipend awarded based on academic performance at the Chennai Mathematical Institute.

Publications and Preprints

Universal Dynamic Regret and Constraint Violation Bounds for Constrained Online Convex Optimization **2025**
Subhamon Supantha, *A. Sinha*
Elegant Paper Award, *International Conference on Algorithmic Learning Theory (ALT), 2026*, arXiv:2510.01867

Projection-free Algorithms for Online Convex Optimization with Adversarial Constraints **2025**
D. Sarkar, A. Chakrabartty, ***Subhamon Supantha****, P. Dey, A. Sinha*
Accepted, Annual Conference on Artificial Intelligence and Statistics (AISTATS), 2026, arXiv:2501.16919

A Dynamic Agent Based Model of the Real Economy **2024**
Subhamon Supantha*, N. K. Sharma*
Accepted, International Conference on Computing in Economics and Finance (CEF), 2025, arXiv:2401.07070

A Refinement of the Neural Collapse Phenomenon in the Presence of Class Hierarchies **2026**
Subhamon Supantha*, P. Pandit, A. Rangamani*
Working paper

Ongoing Projects

Characterizing Spurious Correlations in Neural Networks
Joint work with Prof. Vidya Muthukumar (Georgia Tech)

We are trying to characterize conditions under which neural networks learn spurious correlations and how to mitigate them.

Best Arm Identification in Bandits under Constraints

Joint work with Prof. Debabrota Basu (INRIA, France)

We venture further from linear constraints. Having discovered a lower bound, currently designing algorithms to match it.

Full-time Employment

Indian Institute of Technology, Bombay **2025–2026**

Pre-doctoral Researcher at the Center for Machine Intelligence and Data Science (CMInDS)

Worked on fundamental problems in the representation geometry of neural networks.

Kantar **2023–2024**

Data Scientist

Built practical Bayesian MCMC forecasting models in R/Python. Responsible for streamlining and automating various process pipelines resulting in reduction of time on task from days to hours. Also designed surveys (conjoint analysis) and pricing models.

Internships

Tata Institute of Fundamental Research **Mumbai**

Summer Research Project, Supervisor: Dr. Abhishek Sinha *May–Aug 2024*

Worked on fundamental problems in Online Convex Optimization.

Observer Research Foundation **Kolkata**

Research Intern *Aug–Oct 2021*

Conducted data analysis of factors pertaining to United Nations SDG Goals. Using time-series, panel, and cross-sectional statistical methods and contributed to real life public policy projects under SDGs, Urban Economics and Environmental Economics.

Reading Projects

Dec–May 2024: **A survey on the Neural Tangent Kernel: Theory, Application and Background**: MSc thesis at CMI under Prof. KV Subrahmanyam.

Aug–Dec 2023: **Large Language Models**: CMI Reading Group with Prof. KV Subrahmanyam, Prof. Pranabendu Mishra, Prof. Madhavan Mukund. Presented papers like *Attention is All You Need*, *Emergent World Representations*.

Conferences & Workshops

Aug 2026: Princeton Machine Learning Theory Summer School, Princeton University

Jan 2026: R. Narasimhan Workshop on Online Learning and Optimization, TIFR Mumbai

July 2025: JTG/IEEE ITSoc Summer School, IIT Bombay

Aug 2024: IndoML Symposium, BITS Pilani Goa

Jul 2024: Game Theory, Mechanism Design, and AI Symposium, IISc Bangalore

Dec 2023: ACM Winter School on Network Science, Ahmedabad University

Jan 2023: 57th Annual Conference of The Indian Econometric Society, University of Hyderabad