

Subhamon Supantha

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Current Affiliation

Pre-doctoral Researcher <i>Center for Machine Intelligence and Data Science, IIT Bombay</i>	July, 2025–June, 2026 <i>PI: Prof. Parthe Pandit</i>
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Education

Chennai Mathematical Institute <i>Masters in Computer Science</i>	2023–2025
University of Hyderabad <i>Masters in Economics</i>	2020–2022
Jadavpur University <i>Bachelors in Economics</i>	2017–2020

Publications and Preprints

Universal Dynamic Regret and Constraint Violation Bounds for Constrained Online Convex Optimization <i>Subhamon Supantha, A. Sinha</i> <i>Accepted, International Conference on Algorithmic Learning Theory, 2026, arXiv:2510.01867</i>	2025
Projection-free Algorithms for Online Convex Optimization with Adversarial Constraints <i>D. Sarkar, A. Chakrabartty, Subhamon Supantha, P. Dey, A. Sinha</i> <i>Preprint, arXiv:2501.16919</i>	2025
A Dynamic Agent Based Model of the Real Economy <i>Subhamon Supantha, N. K. Sharma</i> <i>Accepted, International Conference on Computing in Economics and Finance (2025), arXiv:2401.07070</i>	2024
A Refinement of the Neural Collapse Phenomenon in the Presence of Class Hierarchies <i>Subhamon Supantha, P. Pandit, A. Rangamani</i> <i>Working paper</i>	2025

Ongoing Projects

Generalization of Neural Feature Collapse <i>Joint work with Prof. Parthe Pandit (IIT Bombay) and Prof. Akshay Rangamani (NJIT)</i> <i>Understanding terminal phase training in certain conditions commonly arising in modern architectures</i>	2025
Feature Learning in Group Equivariant Networks <i>Joint work with Prof. Parthe Pandit (IIT Bombay) and Prof. KV Subrahmanyam (CMI)</i> <i>Characterizing the feature maps learned by a group equivariant convolutional network</i>	2025
Online Convex Optimization with Adversarial Constraints <i>Joint work with Prof. Abhishek Sinha (TIFR, Mumbai)</i> <i>We have found an algorithm which beats the SOTA dynamic benchmarks in the COCO problem (see in publication and preprints) . Currently working to match the minimax lower bound.</i>	2025
Best Arm Identification in Bandits under Constraints <i>Joint work with Prof. Debabrota Basu (INRIA, France)</i>	2025

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

Industry Experience

Kantar IMRB

June, 2023–January, 2024

Associate Research Manager

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.

Scholarships

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

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*.

Internships

Tata Institute of Fundamental Research

Mumbai

Summer Research Project, Supervisor: Dr. Abhishek Sinha

May–Aug 2024

Carried out theoretical research 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.

Conferences & Workshops

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

Extra-Curricular Activities

2019–20: Assistant director for feature film *#Homecoming*, available for streaming on SonyLiv.

2017–18: Actor, Jadavpur University Drama Club and youth theater group *VerseOn*.

2011: Represented Videocon School of Cricket at U-14 CAB Tournament (BCCI state level).