

SHIVAM PATEL

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EDUCATION

- Carnegie Mellon University** 2024-29 (Expected)
PhD in Electrical and Computer Engineering
Advisor: Prof. Gauri Joshi
- Indian Institute of Technology Bombay** 2020-24
Bachelor of Technology in Electrical Engineering
Advisor: Prof. Vivek Borkar; CPI: 9.66/10

RESEARCH INTERESTS

Efficient and Robust LLM Inference, Language Query Routing and Load Balancing
Previously: Optimization, Stochastic Systems, Game Theory

PUBLICATIONS AND PREPRINTS

- [5] LOCUS: Low-Dimensional Model Embeddings for Efficient Model Exploration, Comparison, and Selection. **Shivam Patel**, William Cocke, Gauri Joshi. arXiv preprint, 2026. [🔗](#)
- [4] Federate the Router: Learning Language Model Routers with Sparse and Decentralized Evaluations Baris Askin*, **Shivam Patel***, Anupam Nayak*, Andrea Vigano, Jiin Woo, Gauri Joshi, Carlee Joe-Wong. arXiv preprint, 2026. [🔗](#)
- [3] ProxRouter: Proximity-Weighted LLM Query Routing for Improved Robustness to Outliers **Shivam Patel**, Neharika Jali, Ankur Mallick, Gauri Joshi. International Conference on Artificial Intelligence and Statistics, AISTATS 2026. [🔗](#)
- [2] An Asymptotic CVaR Measure of Risk for Markov Chains **Shivam Patel**, Vivek S. Borkar. IEEE Signal Processing and Communications Conf., SPCOM 2024. [🔗](#)
- [1] f -FERM: A Scalable Framework for Robust Fair Empirical Risk Minimization Sina Baharlouei, **Shivam Patel**, Meisam Razaviyayn. The Twelfth International Conference on Learning Representations, ICLR 2024. [🔗](#)

* Equal Contribution.

RELEVANT COURSEWORK

- At CMU:** Algorithms for Language Modeling, Generative AI, Statistical Methods in Machine Learning, Large Scale Optimization for Distributed ML
- At IITB:** Stochastic Optimization, Markov Chains and Queueing Systems, Advanced ML, Information Theory Estimation and Identification, Reinforcement Learning, Game Theory

SCHOLASTIC ACHIEVEMENTS

- Awarded the William Messner Endowed Fellowship at ECE, CMU (2025-26)
- Conferred the Carnegie Institute of Technology Dean's Fellowship at CMU (2024-25)
- Awarded the IUSSTF-Viterbi Scholarship for pursuing summer research at USC Viterbi School by Department of Science & Technology, Govt. of India. One of 15 selected students across India. (2023)
- Accorded the Kishore Vaigyanik Protsahan Yojana (KVPY) fellowship by IISc and DST India (2020)
- Achieved an All India Rank 219 in JEE Advanced among 0.225 million candidates (2020)