Harshvardhan Agarwal

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EDUCATION

2024–2026	**M.S. in Computer Science**, Stanford University	CGPA: 4.02/4.0

Relevant Courses: Language Modeling from Scratch, Machine Learning with Graphs, Human-Centered NLP, Principles of Robot Autonomy

2020–2024	**B.Tech. in Computer Science & Engineering**, IIT Bombay	CGPA: 9.93/10.0

Relevant Courses: Data Analysis and Interpretation, AI and ML, Intelligent and Learning Agents, Organization of Web Information, Advanced Image Processing

HONORS & AWARDS

- **Silver Medal** at **International Physics Olympiad** (IPhO 2019), Tel Aviv, Israel.
- **Honourable Mention** at **Asian Physics Olympiad** (APhO 2019), Adelaide, Australia.
- **Infosys Award** for excellent performance in **International Olympiads**.
- **ICPC 2024 World Finalist**, Astana, Kazakhstan.
- **Rank 9** in **JEE Advanced 2020** amongst 150,000 aspirants.
- **Rank 6** in **JEE Main 2020** taken by over 1 million aspirants.
- **KVPY Fellowship 2019** recipient with **Rank 3.**

PUBLICATIONS

[1] **Harshvardhan Agarwal**, Sunita Sarawagi, "The missing alignment link of In-Context learning on sequences," in *Proceedings of the Forty-Second International Conference on Machine Learning*, 2025.

[2] Pulkit Agarwal, **Harshvardhan Agarwal**, Vaibhav Raj, Swaprava Nath, "Harmonious balanced partitioning of a network of agents," in *Proceedings of the 24th International Conference on Autonomous Agents and Multiagent Systems*, 2025.

WORK EXPERIENCE

Co-Founder, ContextFort (YC S25) — Summer 2025

- Built a system to safeguard developer-facing coding agents against prompt-injection and other adversarial inputs. Designed a red-teaming agent to identify vulnerabilities in deployed agents. Raised $500K in pre-seed funding.

Software Engineering Intern, Optiver Services B.V. — Summer 2023

- Designed and implemented a high-performance data retrieval and aggregation pipeline for order-flow data across distributed storage systems, substantially improving latency and throughput. Refined detection logic for aggressive orders relative to self-resting orders to ensure accurate monitoring and analysis.

Quantitative Research Intern, Tower Research Capital — Winter 2022

- Built a regression model to forecast short-horizon price movements in highly liquid crypto markets. Optimized trading strategies by applying reinforcement learning to maximize PnL over simulated order-book dynamics.

Research Experience

K-shot Long Context Relational Transformer   Fall 2025 - Present
Prof. Jure Leskovec and Prof. Carlos Guestrin, Stanford

– Investigating effective graph sub-sampling and example retrieval methods for better informed predictions and optimizing architecture for long context scaling of Relational Transformer.

In-Context Learning for Structured Predictions   Summer 2024
Prof. Sunita Sarawagi, IIT Bombay

– Investigated language models' ability to learn alignment in-context from sequences. Developed ICATune for sample efficient finetuning and improved OOD generalization.

Tokenization Techniques in Large Language Models   Fall 2023 - Spring 2024
Prof. Preethi Jyothi and Prof. Soumen Chakrabarti, IIT Bombay

– Pretrained tokenization-free models (HLM, Charformer, CANINE), and fine-tuned for NLI and sentiment tasks. Proposed a novel token-generation architecture for morphological end-to-end subword discovery for multilingual text.

Stanford Online Deliberation Platform   Fall 2024 – Present
Prof. Ashish Goel, Stanford

– Implemented algorithm for auditing justified representation (JR) in expert-question selection for deliberative process. Working on context attributed agenda creation from article and discussion.

Balanced Multi-Agent Partitioning with Preferences   Spring 2024
Prof. Swaprava Nath, IIT Bombay

– Characterized fairness properties (EF and Core) in balanced partitions and proved existence of (1,0)-core partitions. Demonstrated impossibility of envy-free balanced partition for 2D-integer lattices.

Robust Celltree for Distributed Repositories   Fall 2023 - Spring 2024
Prof. Manoj Prabhakaran, IIT Bombay and Prof. Indranil Gupta, UIUC

– Developed dynamic, programmable data-tree structures ensuring correctness, liveness, and fault tolerance. Integrated cryptographic PoS mechanisms to prevent Sybil attacks.

The Homesteading Problem and Packing Cubes   Summer 2022
Prof. Sándor Fekete, TU Braunschweig and Prof. Aaron Becker, UH Texas

– Developed strategies for maximizing discrete clearance under constant erosion in the L_∞ norm. Proved optimal worst-case cube packings inside a cuboid, extending known 2D results to three dimensions.

Teaching Assistant

- MA 109 Calculus I — *Prof. Mayukh Mukherjee, IIT Bombay*
- CS 251 Software Systems Lab — *Prof. Kavi Arya, IIT Bombay*
- CS 6001 Game Theory and Mechanism Design — *Prof. Swaprava Nath, IIT Bombay*
- CS 217 Artificial Intelligence and Machine Learning — *Prof. Swaprava Nath, IIT Bombay*