Sudhanshu Agrawal

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Education

University of California, Los Angeles **Sept 2019 – June 2023**

B.S. Computer Science *(Magna cum laude)* B.S. Mathematics *(Cum laude)* **GPA: 3.92**

Undergraduate Research and Teaching

- UCLA Computer Science, Machine Intelligence Group: undergraduate research, advised by Professor Aditya Grover.
- UCLA Mathematics Department: undergraduate research, advised by Professors Levon Nurbekyan and Samy Wu Fung.
- ACM, UCLA: created and taught ML and deep learning workshops to over 200 students regularly over 2 years.

Work Experience

Qualcomm : ***ML Research Engineer*** **Aug 2023 – Present** *(San Diego)*

- **LLM efficiency research:** Conducted research on new techniques to accelerate the generation speed of LLMs via speculative decoding. 2 conference papers published and 7 inventions with multiple US/global patent applications pending.
- **Implementation and commercialization:** carried out end-to-end implementation and testing of these algorithms on Qualcomm edge devices, subsequently used for public demos and included in commercial Snapdragon chipset releases.

Qualcomm : ***ML Engineering Intern*** **June – Sept 2022** *(San Diego)*

- **Novel *Python* profiler:** created a profiling tool for deep learning applications, capable of timing code function-by-function, line-by-line, and profiling multiprocessing applications.

SonicJobs : ***ML Engineering Intern*** **June – Sept 2021** *(Remote)*

- **Synthetic data-set generation:** created a pipeline to scalably generate over 100,000 *HTML*/*CSS* webpages with varying contents and styles, solving the challenge of obtaining a diverse, labelled training data-set for a computer vision model.

Reliance Jio : ***ML & Data Science Intern*** **July – Oct 2020** *(Remote)*

- **Predicting the properties of hydrocarbons:** developed predictive models leveraging lasso regression, ridge regression, support vector regression, recursive feature elimination, linear discriminant analysis, and 1-D convolutions.

Publications

Spiffy: Speculative Decoding for Diffusion LLMs **2025**

- **Agrawal, Sudhanshu**, et al., "Spiffy: Multiplying Diffusion LLM Acceleration via Lossless Speculative Decoding." **arXiv:2509.18085**.

VOCABTRIM: Improving Speculative Decoding via LMHead Dimensionality Reduction **2025**

- Goel, Raghavv, **Agrawal, Sudhanshu**, et al., "VOCABTRIM: Vocabulary Pruning for Efficient Speculative Decoding in LLMs." **ICML 2025 Workshop on Efficient Systems for Foundation Models**.

AdaEDL: Early Draft Stopping for Speculative Decoding of LLMs **2024**

- **Agrawal, Sudhanshu**, Jeon, Wonseok, and Lee, Mingu, "AdaEDL: Early Draft Stopping for Speculative Decoding of Large Language Models via an Entropy-based Lower Bound on Token Acceptance Probability." **NeurIPS 2024 Efficient Natural Language and Speech Processing Workshop.**

ExPT: Synthetic Pretraining for Few-Shot Experimental Design **2023**

- Nguyen, Tung, **Agrawal, Sudhanshu**, and Grover, Aditya, "Expt: Synthetic pretraining for few-shot experimental design." **Advances in Neural Information Processing Systems 36 (2023): 45856-45869**.

Efficiently Solving High Dimensional Non-local Mean Field Game Problems **2022**

- **Agrawal, Sudhanshu**, Lee, Wonjun, Fung, Samy W., Nurbekyan Levon, "Random features for high-dimensional nonlocal mean-field games." **Journal of Computational Physics 459 (2022): 111136**.

Invited Talks, Judgeships, Reviewing

- **Reviewer:** 2026 **AAAI** Conference
- **Judge:** 2025 **UCSD** Graduate Student Research Exposition
- **Judge:** 2025 **San Diego State University** Student Research Symposium
- **Reviewer:** 2025 **ICML** Efficient Systems for Foundation Models Workshop
- **Reviewer:** 2025 **NeurIPS** Efficient Natural Language and Speech Processing Workshop
- **Speaker:** 2024 **UCSD and Qualcomm** Graduate Students Tech Talk and Recruitment Event
- **Speaker:** 2024 **UCSD, IEEE, Qualcomm** Careers Panel
- **Panelist:** 2024 **UCLA Mathematics Department** Alumni Panel