Aakash Lahoti

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Email Website GitHub Scholar

Education

Carnegie Mellon University — Pittsburgh, USA
Ph.D. in Machine Learning — 2023 - *(Current)*
- Advisor: Prof. Albert Gu
- Research Interests: Sequence Modeling, State Space Models
- Skills: Python, C, C++, PyTorch, NumPy

Carnegie Mellon University — Pittsburgh, USA
M.S. in Machine Learning — 2021 - 2022
- Advisor: Prof. Aarti Singh
- Research: Theory of Deep Learning
- GPA: 4.12/4.00

Indian Institute of Technology Kanpur — Kanpur, India
B.Tech. in Computer Science and Engineering — 2016 - 2020
- GPA: 9.7/10.0

Work Experience

Cartesia Inc. — San Francisco, CA
Research Intern — May 2024 - Aug 2024
- Developed and trained efficient and performant Text-to-Speech models.

Meta (Facebook) — Seattle, WA
Machine Learning Engineer — May 2022 - Aug 2022
- Developed a two-stage integrity classifier for Facebook/Instagram, reducing compute costs by 40% while maintaining classification accuracy.

Google — Bangalore, India
Software Engineer — Aug 2020 - Aug 2021
- Designed and implemented APIs for Google Assistant media backend.

Publications

1. **Aakash Lahoti***, Tanya Marwah*, Ratish Puduppully, Albert Gu. Chimera: State Space Models Beyond Sequences. *In the Proceedings of International Conference on Machine Learning (ICML)*, 2025 (under review).
2. Sukjun Hwang*, **Aakash Lahoti***, Ratish Puduppully, Tri Dao, Albert Gu. Hydra: Bidirectional State Space Models Through Generalized Matrix Mixers. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
3. **Aakash Lahoti**, Stefani Karp, Ezra Winston, Aarti Singh, Yuanzhi Li. Role of Locality and Weight Sharing in Image-Based Tasks: A Sample Complexity Separation between CNNs, LCNs, and FCNs. *International Conference on Learning Representations (ICLR)*, **2024 (Spotlight)**.
4. **Aakash Lahoti***, Spandan Senapati*, Ketan Rajawat, Alec Koppel. Sharpened Lazy Incremental Quasi-Newton Method. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2024.
5. Shih-Lun Wu, **Aakash Lahoti**, Arjun D Desai, Karan Goel, Chris Donahue, Albert Gu. Towards Codec-LM Co-design for Neural Codec Language Models. *NAACL Student Research Workshop*, 2025.

** Equal Contribution*

Awards

- **Proficiency Medal**, Best undergraduate research project in the department — 2019
- **Academic Excellence Award**, Top 10 percentile in academics — 2016, 2017
- **Joint Entrance Exam, Advanced**, All India Rank 193 — 2016
- **Kishore Vaigyanik Protsahan Yojana (KVPY)**, All India Rank 58 — 2015