

Samiul Alam

PHD CANDIDATE, OHIO STATE UNIVERSITY

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"Perpetually Convalescent: Learning & Evolving"

RESEARCH INTERESTS

Multimodal Foundation Models, AI Agents for Mobile Systems, Augmented Reality, Distributed Systems.

WORK EXPERIENCE

Google

Mountain View, California

SOFTWARE ENGINEERING INTERN

May 2025 - August 2025

- Worked on aligning synthetic data generated using large language models to real user data and using it for creating personalized recommender systems.

Ohio State University

Columbus, Ohio

GRADUATE RESEARCH ASSOCIATE

Aug 2023 - Present

- Collaborating with Meta's Surreal Team for studying eye tracking for reading detection.
- Formulating novel techniques for on-device AI, model compression, and quantization.

Michigan State University

East Lansing, Michigan

RESEARCH ASSISTANT

Jan 2022 - Aug 2023

- Built novel heterogeneity aware distributed federated learning systems.
- Published 5 papers to top conferences/journals (NeurIPS, SenSys, ICASSP, InterSpeech, DMLR).

Samsung Research and Development Institute, Bangladesh

Dhaka, Bangladesh

ENGINEER I, MOBILE APPLICATIONS

Apr 2018 - May 2021

- Extended BLE interfacing for Samsung's Wearable Apps (iOS and Android).
- Developed Samsung's cloud service SDK.
- Earned Samsung Software Certification (Top 10% of developers).

EDUCATION

Ohio State University

Columbus, Ohio

PHD IN COMPUTER SCIENCE AND ENGINEERING

Aug 2023 - Present

- Transferred to OSU from MSU with lab. Currently in **4th year**.
- Major in AI, Minor in **Vision/AR** and **Graph Theory**
- Awarded prestigious OSU University Fellowship.
- Graduation Fall 2026/Spring 2027

Michigan State University

East Lansing, MI

MS. IN COMPUTER SCIENCE AND ENGINEERING, GPA:**3.86**

Jan 2022 - Aug 2023

SKILLS

Hardware Platforms Jetson, Raspberry Pi, Mobile, Meta Aria Glasses.

Software Development Android, iOS., Python

Libraries Transformers, Pytorch, Jax, LangChain, LLamaIndex, Beam.

SELECTED PUBLICATIONS

Deep Learning and Generative AI

- Cheng, Z., Wahnig, S., Gupta, R., **Alam, S.**, et. al. “Benchmarking is Broken - Don’t Let AI be Its Own Judge” 39th Conference on Neural Information Processing and Systems (NeurIPS 2025)
- Yang, C., **Alam, S.**, et al. “Reading Recognition in the Wild”. 39th Conference on Neural Information Processing and Systems (NeurIPS 2025). [Paper]
- Wang, X., **Alam, S.**, Wan, Z., Shen, H., Zhang, M. “MTL-SVD: Minimizing Singular Value Truncation Loss for Large Language Model Compression. NAACL 2025
- I. Siam, H. Ahn, L. Liu, **S. Alam**, H. Shen, Z. Cao, N. Shroff, B. Krishnamachari, M. Srivastava, and M. Zhang. “Artificial Intelligence of Things: A Survey”. ACM Transactions on Sensor Networks 2024
- X. Wang, Z. Wan, A. Hekmati, M. Zong, **S. Alam**, M. Zhang, and B. Krishnamachari, “IoT in the Era of Generative AI: Vision and Challenges”. IEEE Internet Computing 2024.[Best Paper Award]
- Wan, Z., Wang, X., Liu, C., **S. Alam**, Zheng, Y., Qu, Z., Yan, S. et al. “Efficient Large Language Models: A Survey.” Transactions on Machine Learning Research (2024).

Federated Learning Systems

- G. Maolin, L. Li, **S. Alam**, L. Liu, L. Liu, M. Zhang, and Z. Cao. “GeoFL: A Framework for Efficient Geo-Distributed Cross-Device Federated Learning” Proceedings of the IEEE International Conference on Computer Communications 2025. (Accepted)
- Zhang, T., Feng, T., **S. Alam**, Dimitriadis, D., Zhang, M., Narayanan, S. S., Avestimehr, S. “GPT-FL: Generative Pre-trained Model-Assisted Federated Learning” 2023 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW).
- **Alam, S.**, Zhang, T., Feng, T., Shen, H., Cao, Z., Zhao, D., Ko, J., Zhang, M. “FedAIoT: A Federated Learning Benchmark for Artificial Intelligence of Things.” Journal of Data-centric Machine Learning Research (2024).
- Zhang, T., Feng, T., **S. Alam**, Lee, S., Zhang, M., Narayanan, S. S., Avestimehr, S. “FedAudio: A Federated Learning Benchmark for Audio Tasks” 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- **S. Alam**, Liu, L., Yan, M., Zhang, M. “FedRolex: Model-Heterogeneous Federated Learning with Rolling Sub-Model Extraction” 36th Conference on Neural Information Processing and Systems (NeurIPS 2022). [Paper] [Code]
- Sun, J., Li, A., **S. Alam**, Zhang, M., Li, H., Chen, Y. “FedSEA: A Semi-Asynchronous Federated Learning Framework for Extremely Heterogeneous Devices” 20th ACM Conference on Embedded Networked Sensor Systems. (SenSys 2022).

State Space Modelling

- **S. Alam**, Amin, M. R., Faghih, R. T. “Sparse Multichannel Decomposition of Electrodermal Activity with Physiological Priors,” IEEE Open Journal of Engineering in Medicine and Biology.
- Al-Hussaini, I., Humayun, A. I., **Alam, S.**, Foysal, S. I., ..., Haque, M. A. “Predictive real-time beat tracking from music for embedded application.” 2018 IEEE Conference on Multimedia Information Processing and Retrieval (MIPR 2018).

PROJECTS

Agentic Supermemory System

AIoT-MLSYS LAB@OSU + META

Working on developing a multi-modal dataset and benchmark for AI agents with wearable glasses. The benchmark tests retrieval and long-form video understanding in addition to tool calling accuracy and visual question answering accuracy of the multi-agent system.

Ph.D. Research

Aug 2025 - Present

Spatio-Temporal Token Compression

AIoT-MLSYS LAB@OSU

Working on an efficient on-device vision language model (VLM) that can retrieve relevant context from compressed embeddings of long video streams given natural language queries. The goal of the project is to achieve ‘supermemory’, which is to make the VLM capable of accurately recalling objects, events, and interactions in the distant past.

Ph.D. Research

Jan 2024 - Present

Predicting Generalization in Deep Learning

PGDL COMPETITION, NEURIPS

Developed a method to predict generalization in vision neural networks.

NeurIPS Workshop

Jan 2020 - Aug 2020