Azal Ahmad Khan

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Education

University of Minnesota, *Twin–Cities* *September 2024 – May 2029*
Ph.D., *Computer Science and Engineering*

- Advisor: Dr. Ali Anwar

Indian Institute of Technology (IIT), *Guwahati* *November 2020 – May 2024*
B.Tech., *Chemical Science and Technology*

- Thesis Advisor: Dr. Debanga Raj Neog
- Thesis: Trustworthy Language Models and Optimized Text-to-Image Synthesis via DPO. [PDF]

Research Experience

University of Minnesota *September 2024 – Present*
Graduate Research Assistant *Advisor: Dr. Ali Anwar*

University of Minnesota *January 2022 – May 2024*
Undergraduate Research Intern *Advisor: Dr. Ali Anwar*

University of New South Wales *January 2022 – December 2023*
Undergraduate Research Intern *Advisor: Dr. Rohitash Chandra*

Publications

C – Peer-reviewed Conference Proceedings, J – Journal Articles, U – Under Review Articles

C1. Khan, A. F., **Khan, Azal Ahmad**, Abdelmoniem, A. M., Fountain, S., Butt, A. R. & Anwar, A. *FLOAT: Federated Learning Optimizations with Automated Tuning* in *Proceedings of the Nineteenth European Conference on Computer Systems* (2024). (*Acceptance Rate: 16%*) [PDF].

J1. **Khan, Azal Ahmad**, Hussain, S. & Chandra, R. *A Quantum-Inspired Predator–Prey Algorithm for Real-Parameter Optimization*. *Algorithms* **17,** 33 (2024). [PDF].

J2. **Khan, Azal Ahmad**, Chaudhari, O. & Chandra, R. *A review of ensemble learning and data augmentation models for class imbalanced problems: combination, implementation and evaluation*. *Expert Systems with Applications*, 122778 (2023). [PDF].

U1. **Khan, Azal Ahmad**, Alam, S., Wang, X., Khan, A. F., Anwar, A. & Neog, D. R. *Mitigating Sycophancy in Large Language Models via Direct Preference Optimization* 2024.

U2. **Khan, Azal Ahmad**, Khan, A. F., Ali, H. & Anwar, A. *Personalized Federated Learning Techniques: Empirical Analysis* 2024. [PDF].

U3. **Khan, Azal Ahmad**, Wang, X., Khan, A. F., Anwar, A. & Neog, D. R. *Direct Preference Optimization for Prompt Engineering in Text-to-Image Synthesis* 2024.

U4. Khan, A. F., Wang, X., Le, Q., **Khan, Azal Ahmad**, Ali, H., Ding, J., Butt, A. & Anwar, A. *PI-FL: Personalized and incentivized federated learning* 2023. [PDF].

Awards & Grants

2024 Received departmental GAGE Fellowship by the University of Minnesota.
2024 Received a travel grant to attend the Google Research Week at Google Research, Bangalore.
2024 Global Undergraduate Research Award (*Top 10%*) for a Highly Commended Entry.

Technical Skills

Programming Python, C/C++ **Web Technologies** HTML, CSS, BootStrap
ML Tools Pandas, Numpy, Scipy, Matplotlib, Scikit-learn, Tensorflow, Pytorch, OpenCV, Hugging Face
Miscellaneous Jupyter Notebook, Google Colab, Git, GitHub, SQL, LaTeX

Academic Service

2024 **Reviewer** NeurIPS, COLM, SetLLM-ICLR, Tiny Papers-ICLR
2023 **Reviewer** GenBio-NeurIPS