Mohammad Anas Jawad

PhD Student, Department of Computer Science · University of Illinois Chicago (UIC)

mjawad4@uic.edu linkedin.com/in/anasjawad github.com/anas-jawad anas-jawad.github.io

PROFESSIONAL SUMMARY

Computer Science PhD researcher specializing in LLM calibration, uncertainty estimation, and reasoning, with research appearing in leading venues including ICML. Experienced developing and evaluating post-hoc calibration methods for large language models across diverse model families and generation settings, with a focus on quantifying and leveraging model confidence under distributional uncertainty.

EDUCATION

University of Illinois Chicago — Chicago, IL, USA
Doctor of Philosophy in Computer Science — *Fall 2023 – Present*

- **GPA:** 4.00/4.00
- **Anticipated Graduation:** May 2028
- **Advised by:** Dr. Cornelia Caragea

Islamic University of Technology — Gazipur, Bangladesh
B.Sc. in Computer Science & Engineering — *Jan. 2016 – Nov. 2019*

- **GPA:** 3.81/4.00 (Ranked 5th in class)
- **Scholarship:** OIC Full Scholarship (merit-based, awarded by the Organisation of Islamic Cooperation)
- **Thesis Supervisor:** Dr. Abu Raihan Mostafa Kamal
- **Undergraduate Thesis:** "Improving Deep Learning Based Recommender Systems Using Dimensionality Reduction Methodologies"

PROFESSIONAL EXPERIENCE

University of Illinois Chicago — Chicago, IL, USA
Graduate Assistant, Department of Computer Science — *Aug. 2023 – Present*

- **Research Assistant (dl4nlpspace Lab):** Research calibration, uncertainty estimation, and reasoning in LLMs, spanning confidence estimation, behavioral robustness, and reasoning chain induction and evaluation across classification and open-ended generation settings. Work evaluated across multiple model families and benchmarks, with results published and under review at top ML venues.
- **Teaching Assistant:** Lead labs and conduct office hours for undergraduate courses, including Discrete Mathematics, Programming Practicum, and Systems Programming.

Islamic University of Technology — Gazipur, Bangladesh
Lecturer, Department of Computer Science & Engineering — *Jan. 2020 – July 2023*

- **Teaching:** Developed curriculum and instructed courses and labs for Data Mining, Database Management Systems, Web Architecture, Visual Programming, and Object-Oriented Concepts.
- **Research Collaboration:** Active member of the Network and Data Analysis Group (NDAG).

Nilavo Technologies Ltd. — Dhaka, Bangladesh
Software Development Intern — *Nov. 2018 – Dec. 2018*

- Developed and updated a proprietary project management web application, resolving back-end PostgreSQL database bugs via the Spring Framework and troubleshooting front-end visual issues using AngularJS and Bootstrap.

PUBLICATIONS AND PREPRINTS

Peer-Reviewed

[1] **Mohammad Anas Jawad** and Cornelia Caragea. "CaliDist: Calibrating Large Language Models via Behavioral Robustness to Distraction." In *Proceedings of the 43rd International Conference on Machine Learning (ICML)*, 2026.

[2] Nishat Raihan, **Mohammad Anas Jawad**, Md Mezbaur Rahman, Noshin Ulfat, Pranav Gupta, Mehrab Mustafy Rahman, Santu Karmaker, and Marcos Zampieri. "Overview of BLP-2025 task 2: Code generation in Bangla." In *Proceedings of the Second Workshop on Bangla Language Processing (BLP-2025)*, pages 373–387, December 2025.

Preprints & Other Research

- Mohammad Ridwan Kabir, Mohammad Ishrak Abedin, Mohaimin Ehsan, **Mohammad Anas Jawad**, Hasan Mahmud, and Md Kamrul Hasan. "Renovo: Sensor-based visual assistive technology for physiotherapists in the rehabilitation of stroke patients with upper limb motor impairments." *arXiv preprint arXiv:2109.03631*, September 2021.

SKILLS

- **ML & Core Research:** PyTorch, HuggingFace, Model Inference, Calibration, vLLM, TensorFlow, Keras, scikit-learn, NLTK
- **Programming Languages:** Python, C/C++, JavaScript, Java, Shell Scripting, LaTeX/Overleaf
- **Data Processing:** NumPy, Pandas, SciPy
- **Databases:** MySQL, PostgreSQL, SQLite
- **Tools & Version Control:** Git

ONLINE CERTIFICATIONS

- **Supervised Machine Learning: Regression and Classification** – *DeepLearning.AI*
- **Neural Networks and Deep Learning** – *DeepLearning.AI*

SELECT PROJECTS

Context Optimization in Advanced RAG: Synthesize vs. Re-order
Information Retrieval · *PyTorch, Llama-3.1-8B, Gemini 2.0 Flash, FAISS, SQLite*

Developed a modular RAG pipeline comparing context synthesis and sentence-level re-ordering strategies using Llama-3.1-8B. Implemented DPR retrieval with FAISS and MS-MARCO re-ranking, improving the baseline Exact Match score by $3\times$ and maximizing semantic answer relevance by $\approx 19\%$ on HotpotQA.

Semi-Supervised Node Classification with Large Language Models
Graph Machine Learning · *Llama-3.1-8B, GNNs, Cora Dataset, PyTorch Geometric*

Designed a semi-supervised graph learning framework combining Llama-3.1-8B annotation with GCN-based pseudo-labeling. Implemented difficulty-aware filtering and confidence-based sample selection, improving test accuracy by an average of 3.1% over supervised baselines across unlabeled mask ratios of 0.2–0.6 on the Cora citation network.

Wide & Deep Recommender System on XWine Dataset
Machine Learning · *TensorFlow, Keras, Pandas, scikit-learn*

Built a TensorFlow-based Wide & Deep recommendation model for the XWines dataset, leveraging feature crosses and deep neural representations to achieve a Mean Absolute Error of 0.4304, outperforming linear, deep neural network, and multiple collaborative filtering baselines.

Automated Essay Scoring and ML Classification System
Natural Language Processing · *Python, NLTK, SpaCy, Stanza, scikit-learn*

Developed an NLP-based essay evaluation system using linguistic and semantic features extracted with Word2Vec and Stanford Stanza. Trained MLP and Logistic Regression models for automated grading prediction.

Relational E-Commerce Database Design & Schema Mapping
Database Systems · *SQL, Relational Modeling, ERD Design*

Designed an RBAC-based e-commerce relational schema with normalized entity relationships, integrity constraints, hierarchical categories, and transactional session management.