# Taleef Tamsal

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*Trustworthy & Robust NLP • LLM Safety & Alignment • RAG Evaluation • Dis/Misinformation*

## EDUCATION

**Purdue University Fort Wayne** Fort Wayne, IN

*M.S. Computer Science* *Aug. 2024 – May 2026 (expected)*

- **Advisor:** Dr. Jonathan Rusert
- **GPA:** 4.0/4.0
- **Thesis:** Empirical evaluation of PEFT and quantization-based instruction tuning (Llama-3.1, Qwen-3, Phi-4, Gemma-2) under modern black-box jailbreak attacks to study robustness-efficiency trade-offs.

**Lahore University of Management Sciences** Lahore, Pakistan

*B.S. Computer Science* *Aug. 2020 – May 2024*

- **GPA:** 3.41/4.0

## RESEARCH EXPERIENCE

**Research Collaborator (Dr. Jonathan Rusert's group)** June 2025 – August 2025

*Purdue University Fort Wayne* *Fort Wayne, IN*

- Evaluated attack frameworks (TextFooler, TextDebugger, etc.) and mapped their selection/replacement stages to a proposed query-efficient attack, helping identify which components could be optimized.
- Contributed to literature surveys and comparison tables (datasets, models, query budgets, ASR) and participated in design discussions on query-efficient black-box text attacks on LLMs building on BinarySelect-style methods.

**Development Intern (NLP/RAG)** May 2025 – August 2025

*Medical Informatics Engineering* *Fort Wayne, IN*

- Built RASS (Retrieval-Augmented Semantic Search), a containerized RAG platform to provide semantic, citation-backed search over long-form enterprise documents using Node.js ingestion services, hybrid OpenSearch (BM25 + vectors), and an MCP interface.
- Integrated RAGAS and TruLens as pre-deployment quality gates to monitor grounding, faithfulness, relevance, and latency for each model/retriever configuration.
- Indexed 3k+ Redmine issues and prototyped a clinical-notes workflow so engineers and clinicians could query prior fixes and notes via natural language instead of manual search.

## RESEARCH & PROJECTS

**PEFT and Jailbreak Robustness in Instruction-Tuned LLMs** September 2025 – Present

*Purdue University Fort Wayne*

- **Master's Thesis:** Empirically analyze how LoRA/QLoRA plus quantization affect jailbreak robustness of consumer-sized LLMs (Llama-3.1, Qwen-3, Phi-4, Gemma-2) under black-box attacks such as ArtPrompt, PAIR, DeepInception, and AutoDAN attacks.
- Preparing a submission to EMNLP 2026 and an open attack/defense harness to support reproducible robustness evaluation on small LLMs.

**SemEval 2026** September 2025 – Present

*Purdue University Fort Wayne*

- **Task 6 - CLARITY (political question evasion):** Extending my prior work on manipulation detection to conversational and political QA settings.
- **Task 8 - MTRAGEval (multi-turn RAG evaluation):** Building on RASS to evaluate robustness and grounding in retrieval-conditioned dialogue.

**UNLP-2025 Shared Task - Social-Media Manipulation Detection** January 2025 – May 2025

*Purdue University Fort Wayne*

- Built a joint system for multi-label classification of 10 manipulation techniques and span-level detection on 9.5K Ukrainian Telegram posts, making predictions explicitly explainable.
- Trained RoBERTa-based models with rationale-guided training and class-balanced focal loss, with post-deadline ablations reaching performance competitive with top-3 systems on the dev set.

### SemEval-2025 Task 10 - Multilingual Narratives
September 2024 – January 2025

*Purdue University Fort Wayne*

- Built XLM-R/BERT-based pipelines for entity-role framing, narrative classification, and narrative extraction/justification across five languages.
- Achieved ∼8× improvement over the shared baseline on internal validation runs using role-aware features and curriculum-style multilingual training.

### Campus Connect
January 2025 – May 2025

*Purdue University Fort Wayne*

- Full-stack web portal (React/Node/Firebase) that centralizes TA, research, and academic opportunities for students, with automated CI/CD (GitHub Actions → Firebase) for testing and deployment.

### Efficient Retrieval of Patient Consent Data via Smart Contracts
September 2023 – May 2024

*Lahore University of Management Sciences*

- Extended an IDASH 2023 Task 2 solution to an off-chain architecture for auditable patient consent management, using smart contracts for fine-grained access control and secure consent updates.

## TEACHING ASSISTANCE

### Teaching Assistant - Algorithms (CS 310)
August 2023 – December 2023

*Lahore University of Management Sciences*

- Led tutorials and office hours and graded assignments and quizzes for junior-level Algorithms.

### Teaching Assistant - Introduction to Blockchain (CS 3812)
January 2023 – May 2023

*Lahore University of Management Sciences*

- Updated older assignments and assisted in grading; supported students during weekly tutorials and office hours.

### Teaching Assistant - Topics in Blockchain Technology (CS 589)
August 2022 – December 2022

*Lahore University of Management Sciences*

- Facilitated weekly discussions of papers and research for the topics in Blockchain course, held office hours for assistance, and supervised semester projects.

### Teaching Assistant, Computational Problem Solving (CS 100)
August 2022 – December 2022

*Lahore University of Management Sciences*

- Graded labs and quizzes, held office hours, supervised semester projects, and held tutorial sessions for freshman students.

## ACTIVITIES & LEADERSHIP

### Alumni Mentorship Program - Mentor
July 2024 – Present

*Lahore University of Management Sciences*

- Mentor LUMS undergraduates on graduate school applications (SOP review, program targeting, timelines), transitioning to and succeeding in CS research, and CS career pathways in the US.

### GradApp Lab - Mentor
July 2024 – January 2025

*Lahore University of Management Sciences*

- Mentored undergraduates and early-career CS students from Pakistan, assisting them with graduate school applications (SOP review, program targeting, timelines), transitioning to and succeeding in CS research, and CS career pathways in the US.

### Peer Ambassador At LUMS for Social Support
September 2023 – May 2024

*Lahore University of Management Sciences*

- Mentored Class of 2027 freshmen, offering guidance and support on academic, social, and personal well-being matters to enhance their overall university experience.

### IEEE LUMS Student Chapter - Treasurer
September 2023 – May 2024

*Lahore University of Management Sciences*

- Managed chapter finances and helped organize the IEEE Student Chapter CodinGuru Hackathon.

### LUMS Entrepreneurial Society - Manager HR
Sep 2021 – May 2022

*Lahore University of Management Sciences*

- Organized general body meetings, drafted event proposals, and maintained society records and databases.

## Skills and Tools

**Languages**: Python, C/C++, TypeScript, SQL, Go, R, Scala, HTML/CSS
**Frameworks**: TensorFlow, PyTorch, LangChain, Node.js, Next.js, Material-UI, FastAPI
**Developer Tools**: Git, Docker, Anaconda, bitsandbytes, Weights & Biases, Google Cloud Platform, Linux
**Libraries**: Pandas, NumPy, HF Transformers, Matplotlib, Seaborn, Scikit-learn, SpaCy, DeepSpeed, vLLM, ReactJS

## Professional Certificates

**DeepLearning.AI** Data Engineering

**Meta** Front-End Development

**Google** Data Analytics