Shagoto Rahman

Highly motivated Computer Science PhD student at UC Irvine specializing in Large Language Models (LLMs). Seeking an internship to contribute to innovative research and development in NLP and AI. Proficient in Python and deep learning frameworks, with a proven track record in advancing responsible and efficient generative AI applications through robust problem-solving and optimization strategies.

Research Focus: LLM Guardrail, Intent Understanding, Retrieval-Augmented Generation, Hallucination Mitigation, and Efficient Fine-Tuning, Responsible & Efficient Generative AI

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Curriculum Vitae | Google Scholar | Website | GitHub | LinkedIn

Education

University of California, Irvine — Irvine, CA
PhD, Department of Computer Science. — 2023 – 2029, GPA:3.96/4.00

University of California, Irvine — Irvine, CA
MS, Department of Computer Science. — 2023 – 2025, GPA:3.96/4.00

Research Experience

University of California, Irvine — Irvine, CA
Graduate Research Student — 09/2023 - Present

- Authored "Summary the Savior: Harmful Keyword and Query-based Summarization for LLM Jailbreak Defense", achieving 100% defense success against state-of-the-art jailbreak attacks on leading LLMs.
- Authored "Prompter Says: A Natural Language Processing Approach to Jailbreak Detection in Large Language Models" and conducted semantic and linguistic analysis to detect jailbreak attempts.
- Conducted research on embedding-based Retrieval-Augmented Generation (RAG) systems for response retrieval; implemented cross-encoder reranking and leveraged entailment techniques to mitigate hallucinations in LLM outputs.
- Performed parameter-efficient fine-tuning analyses using methods such as LoRa, QLoRa, and gradient accumulation in commodity GPUs to optimize computational efficiency.
- Designed and implemented dynamic channel slimming and early exit mechanisms leveraging contrastive learning to enhance model performance and efficiency.
- Conducted comprehensive analyses and optimizations of Texera's (data-analytics platform) core components, including Java User Defined Functions (UDFs), runtime code compilation, the Boxplot operator, CSV file scanning across operating systems, and the Parts-Of-Speech Java operator, enhancing performance in workflows.

Work Experience

Paul Merage School of Business, University of California, Irvine — Irvine, CA
Graduate Research Student (Summer 2025) — 07/2025 – 09/2025

- Awarded "Chao Family Comprehensive Cancer Center (CFCCC) Pilot Awards", by the Anti-Cancer Challenge – 2024 and authored "Enhancing Intent Detection in Nicotine Replacement Therapy Tweets Using LLM: A Fine-Tuning Framework with Class Downsampling and Misclassification Refinement" with 28% overall improvement.
- Developed optimized Retrieval-Augmented Generation (RAG) methods with parameter-efficient fine-tuning, enhancing accuracy and relevance of an LLM-based chatbot for nicotine replacement therapy.
- Designed and deployed an optimized LLM-based chatbot for a smoking cessation GroupMe community, achieving high helpfulness ratings and integrating log analysis to drive user engagement.

University of California, Irvine — Irvine, CA
Teaching Assistant — 09/2023 - Present

- Delivered engaging lectures and hands-on labs for Python Programming and Intermediate Programming courses, emphasizing practical coding skills and problem-solving techniques.
- Provided personalized support and guidance to help students strengthen their debugging, algorithmic thinking, and programming abilities.

Skills & Interests

Technical: Python, C++, Java, PyTorch, TensorFlow, PEFT, LoRa, QLoRa, RAG, OpenCV.
Language: English, Bengali, Hindi
Interests: Gaming, Cricket, Football, Videography, Photography.