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Education

May 2026	**PhD in Computer Science**, *Indiana University*, USA GPA: 3.8/4.0
May 2022	**MS in Data Science**, *Indiana University*, USA
May 2019	**MS in Computer Science**, *Indiana University*, USA
May 2017	**B.Tech in Computer Engineering**, *NMIMS*, India

Research Focus & Expertise

PhD candidate specializing in **Natural Language Processing (LLMs)**, **AI Alignment**, and **Reliable Machine Learning**. My research centers on novel *steering* techniques to improve **safety, controllability**, and **interpretability** in LLMs/VLMs:

- **Zero-shot detection of AI-generated images** through task-aligned prompting of VLMs, supporting authenticity verification and content trust.
- **Community-aware content moderation**, using LLMs to interpret user history and apply nuanced, rule-grounded moderation at scale.
- **Controlled reasoning in LLMs**, analyzing decoding dynamics to guide generation toward faithful, safe, and interpretable outputs.

Publications

Nov 2024–Present	**Advanced Heuristics for LLM Decoding Improve Chain-of-Thought Reasoning**, *In Progress* Proposes novel decoding strategies to enhance LLM reasoning, improving **explainability, alignment**, and reliability in complex generation tasks.
Oct 2024–Present	**Hyper-Contextual Steering: Community-Aware Moderation with LLMs**, *In Progress* Develops prompting methods for **context-sensitive alignment** of LLMs with community guidelines and user intent for automated moderation.
Sep 2024–Present	**Task-Aligned Prompting Improves Detection of AI-Generated Images in VLMs**, *Under Review (***NeurIPS 2025***)* Introduces **zero-shot-s^2**, a task-aligned prompting method that improves AI-generated image detection in VLMs by up to 29% without fine-tuning, showing strong generalization across models and datasets.
2023	**REMATCH: Robust and Efficient Knowledge Graph Matching**, **NAACL 2024** Presents a scalable semantic matching framework for large KGs, supporting applications in **search, entity linking**, and recommendation.
2023	**A Multi-Platform Collection of Social Media Posts on the 2022 U.S. Midterm Elections**, **ICWSM 2023** Constructed a 30M-post dataset across platforms for research on **information flow, user behavior**, and misinformation analysis.
2023	**The Inexplicable Efficacy of Language Models**, **ACM XRDS** Wrote a survey article demystifying transformer-based LLMs for general technical audiences, highlighting key trends and open challenges.

Selected Research Projects

Jan 2019–May 2023	**Text2Graph**, *Indiana University* Engineered a semantic role labeling pipeline to extract pseudo-AMRs from unstructured text, enabling **knowledge graph construction at scale**.
Oct 2021–May 2022	**DARPA INCAS Team**, *Indiana University* Developed NLP and graph-based tools to detect online influence campaigns, contributing to government-backed **robustness and security** efforts.
May 2021–Aug 2021	**Review of Attention Models**, *Indiana University* Conducted an in-depth analysis of transformer architectures (BERT, GPT) and their implications for modern NLP, fulfilling PhD candidacy requirements.

Teaching Experience

Fall 2022, 2023, 2024	**Introduction to Network Science**, *Indiana University* Designed and led Python-based tutorials on graph theory and network modeling.
Fall 2019, Spring 2021, Fall 2021	**Elements of Artificial Intelligence**, *Indiana University* Built Python autograders using `pytest`; graded assignments for 300+ students.
Fall 2020	**Applied Machine Learning**, *Indiana University* Assisted in instruction and hands-on ML labs using `scikit-learn` and `PyTorch`.

Internships

Summer 2018	**Technology Consultant**, *PricewaterhouseCoopers* Collaborated on IT consulting projects involving systems integration and tech audits.

Service

Peer Reviewer	*PeerJ Computer Science*
Harvard WorldMUN	Represented India and NMIMS at international MUN conference.
Graduate Government	Department representative in the Graduate Student Government at Indiana University.
Ambassador	Led campus visits for prospective PhD students in Computer Science.

Technical Skills

Core Expertise	**LLMs & NLP (Prompt Engineering, Alignment, Text Generation)**, **Reliable ML (Robustness, Explainability)**, **Multimodal AI (VLMs)**, Generative AI, Deep Learning, Computer Vision
Programming	**Python (Expert)**, Bash, C++, R
Frameworks & Tools	**PyTorch, TensorFlow**, Hugging Face, NumPy, Scikit-learn, Pandas, NetworkX, spaCy, Neo4j
Distributed Systems	Spark (basic), PySpark, Multi-GPU (PyTorch DDP)