

# RISHU KUMAR ROY

[LinkedIn](#) | [GitHub](#) | [HuggingFace](#) | [Kaggle](#) | [email](#) | [Google Scholar](#) | +91-8698611704

## Cover Letter:

I work as a Research Engineer at Avalara, Contributor at Cohere's C4AI community. My work centers on training and aligning large language models for reasoning, retrieval, and task-oriented workflows. I helped design and build ALFA, a GenAI multi-agent platform that enables advanced RAG, fine-tuning, and ethical alignment—already improving task accuracy by over 20% in enterprise use. Prior to this, I led efforts at Atomicwork to optimize inference and accuracy in LLM-based IT support agents.

My research interests focus on multiagent reasoning, alignment strategies like DPO/RLHF, improving problem solving (maths and science) capabilities of LLMs /VLMs using reasoning and reducing hallucinations in LLMs and VLMs, which I explore through both academic and open science collaborations.

## EDUCATION

University of Texas at Austin, USA  
MS in Artificial Intelligence | 2023–2026 (Expected)

Army Institute of Technology, Pune University  
BE in Computer Engineering | 2016–2020 | GPA: 8.6/10

## TECHNICAL SKILLS

- Languages: Python, SQL
- Frameworks: PyTorch, HuggingFace, OpenAI
- Domains: LLMs, NLP, Computer Vision, Recommendation Systems, RAG, RLHF, Search
- Advanced Tools: LoRA/QLoRA, PPO, DPO, Quantization, Fine-tuning, Multi-Agent Systems

## Certifications:

- [AI 394R Reinforcement learning by UT Austin](#), [Ethics in AI by UT Austin](#)
- [Advanced NLP AI 388 by UT AUSTIN](#), STANFORD, CS231 Computer vision by Stanford, [Knowledge Graphs for RAG](#)
- [Deep learning, ML by UT Austin](#), Probability and statistics for Data Science,
- [Advanced Deep learning and LLMs by UT Austin](#), [AI in Healthcare by UT Austin](#)
- [Deep Learning Advanced NLP](#), [Python for Data Science](#), [Product management for Data Science](#), [Advanced SQL for DS](#)

## CURRENT EXPERIENCE

AI Research Engineer, Avalara (Remote) | Nov 2024 – Present

- Designed ALFA GenAI platform enabling multi-agent orchestration and domain-specific fine-tuning.
- Built evaluation framework to reduce hallucinations and improve retrieval (+20% accuracy).
- Researched alignment strategies with RLHF, DPO for ethical goals.

AI Research Engineer, Atomicwork | Apr 2024 – Nov 2024

- Architected ATOM AI: multi-agent GenAI system for ITSM, universal employee support
- Reduced latency by 50% using optimized LLMs.
- Improved accuracy by 20% with rerankers and small aligned models.

Open Science Researcher, C4AI (Cohere) | Apr 2024 – Present

- Research on ethical alignment and multilingual reasoning in LLMs.
- Leading dataset and benchmark creation for Indic languages.

Research Engineer (Freelance), ScaleAI | Oct 2023 – Dec 2023

- Fine-tuned LLMs for code generation and correctness.
- Built pipelines for annotation, ranking, and model evaluation.

## **RESEARCH PAPERS (In Progress)**

- Multilingual Word Embeddings for Indic Retrieval
- Emotional and Ethical Transformers

## **PAST EXPERIENCE**

Data Scientist, Roadzen Inc. | Jul 2022 – Apr 2024

- Built CV+NLP pipeline reducing insurance processing by 90%.
- Achieved F1 > 0.95 in production models.

Data Scientist, Tiger Analytics | Aug 2021 – Jul 2022

- Developed BERT-based call emotion/intent predictors (F1: 0.98).
- Designed compliance detection improving fintech security.

AI Engineer, Schlumberger | Sep 2020 – Aug 2021

- Automated legal parsing saving 150K+ hours.
- Predicted maintenance using sensor/text data.

ML Engineer (Intern), Bluebricks | Nov 2018 – Dec 2019

- Built recommender systems and risk prediction models ( $F1 > 0.95$ ).

Advisor, GenAI, Election Commission of India | Jun 2023 – Oct 2023

- Developed GenAI-based training platform used by thousands.
- Reduced training costs by 50% with chat + semantic search.

## **KAGGLE & COMPETITIONS**

Top 10% in global ML competitions: NLP, CV, Recommendation Systems

## **AWARDS & LEADERSHIP**

- HK Firodia Young Scientist National Award (2nd Prize)
- Intl. Math Olympiad State Rank 1
- IBM Hackathon Finalist
- JEE Advanced 99 Percentile
- Secretary, Rotaract club of AIT | National Service Scheme, Joint Secy
- Mentor, AI Startups