Utkarsh Ankit

utkarsh-ankit.medium.com

Education

M.S. in Robotics & Artificial Intelligence (GPA: 3.83/4.0) 08/2023 – 07/2025
Arizona State University (ASU), Tempe, AZ, USA

B.Tech. in Computer Science & Engineering (GPA: 8/10) 07/2016 – 05/2020
Kalinga Institute of Industrial Technology, Bhubaneswar, India

Technical Skills

- **Programming Languages and ML Frameworks:** Python, C++, SQL, TensorFlow, PyTorch, scikit-learn
- **Deep Learning & LLMs:** Transformers (Hugging Face), fine-tuning (LoRA, PEFT, RLHF)
- **Data Processing & Big Data:** Apache Spark (PySpark), Hadoop, SQL databases
- **Cloud & MLOps:** AWS, GCP, Azure; Docker, Kubernetes, MLflow, Kubeflow
- **Data Engineering & Streaming:** Kafka, Apache Beam, Airflow
- **Evaluation & Deployment:** A/B testing, hyperparameter tuning, ONNX
- **Visualization & Reporting:** Tableau, Power BI, Matplotlib, Seaborn
- **Algorithms & Statistics:** Regression, classification, clustering, hypothesis testing
- **Collaboration & Tools:** Git, JIRA, Confluence

Professional Experience

Software Engineer (Data Science) 10/2020 – 07/2023
BusinessNext, India *2.7 years*

– Led integration of OCR & forecasting models into CRM solutions, boosting accuracy by 20% and improving lead conversion rates.
– Developed & optimized MS SQL-based procedures (stored procs, triggers) to enhance data processing efficiency by 30%.
– Designed predictive dashboards leveraging ML algorithms (Regression, Classification) to drive business decisions.
– Implemented REST & Postman APIs to streamline front-end interactions, reducing data retrieval time by 15%.

Research & Projects

Safe Explicable Planning (Reinforcement Learning) - *(Master's Thesis)* 04/2024 – 07/2025
Cognitive Robotics & Safe Autonomy (CRS) Lab, ASU

– Implementing TRPO & SAC to optimize robot planning under safety constraints aligned with human expectations.
– Converting algorithms into Linear Programs and running simulations on SOL HPC for performance analysis.

Multimodal AI Socratic Physics Instructor - *(Research Assistantship)* 08/2024 – 07/2025
Embodied Games Lab, ASU

– Designed and deployed a phone-based Socratic instructor leveraging LLMs, RAG, and agentic AI to guide students via real-time LiDAR Motion Visualizer graphs through AWS Lambda and API Gateway.
– Transcribed students' speech and combined it with LiDAR data in RAG-augmented prompts for richer, personalized multimodal feedback. Built evaluation guardrails using ROUGE, SBERT cosine similarity, and a custom Socratic Precision F-Score (SPF); failed responses auto-regenerated before student delivery.
– Implemented continuous data engineering and CI pipelines in AWS to ingest gameplay JSON, fine-tune multimodal models, and deliver personalized, just-in-time feedback.

Command & Data Handling (CDH) Engineer - *(Academic Program)* 08/2024 – 12/2024
NASA L'Space Mission Concept Academy

– Led data engineering and ETL pipelines for mission telemetry ingestion, processing, and analysis.

Neural Machine Translation for Indian Languages - *(Internship)* 03/2020 – 08/2020
Indian Institute of Technology (IIT-BHU), India

– Engineered a Transformer-based NMT model with positional encoders, boosting translation accuracy by 15%.
– Integrated Monotonic Chunk-wise Attention, achieving a 3% improvement on supercomputing infrastructure.

Image Segmentation of Satellite & Drone Images - *(Internship)* 05/2018 – 07/2018
Indian Space Research Organisation (ISRO), India

– Devised a CNN-based segmentation pipeline to detect buildings in aerial imagery, achieving a 95% Dice Score.
– Implemented shadow detection, improving segmentation accuracy by 5% in MATLAB/Python.

Additional Experience & Certifications

Graduate Teaching Assistant (ASU): Statistical Machine Learning, AI, and Software Engineering courses.
Technical Blogger @Towards Data Science: 175+ subscribers, 2K+ views, blog featured on BuiltIn.com.
MLOps Certification (Coursera): (Link)