

# Utkarsh Ankit

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## 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](#))