Utkarsh Ankit

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Education

M.S. in Robotics & Artificial Intelligence (GPA: 3.83/4.0)   08/2023 – 05/2025
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:** Python (NumPy, Pandas, Matplotlib), C/C++
- **Machine Learning/AI:** TensorFlow, Keras, PyTorch, OpenCV, Scikit-learn, Transformers (BERT, GPT), LLMs, GANs, RL (TRPO, SAC), GenAI, RAG
- **MLOps/Tools:** Docker, Kubernetes, CI/CD, REST/POSTMAN APIs, Git/GitHub, XML/XSLT, MS Excel
- **Databases:** MS SQL Server, Oracle
- **Cloud/Systems:** AWS, GCP, HPC (Linux), GPU Computing

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 analytics 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%.

AI Developer (Team Lead) – Embodied Games Lab   08/2024 – Present
Arizona State University, Tempe, AZ

- Spearheading development of a multi-modal AI Physics Tutor using LIDAR-based game data to assist student learning in real-time.
- Collaborating with cross-functional teams to design robust architectures and integrate LLMs for interactive tutoring.

Research & Projects

Safe Explicable Planning of Robots (Reinforcement Learning) – Master's Thesis   04/2024 – Present
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.

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

- Collaborated with multidisciplinary teams to design mission data pipelines, leveraging analytics for efficient telemetry handling.
- Developed & tested command & data handling strategies in simulated spacecraft environments, accelerating decision-making for mission design.
- Applied ETL pipelines & analytics dashboards to ensure effective ingestion and analysis of mission-critical data.

Neural Machine Translation for Indian Languages   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   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)