

# KSHITIJ SEKHAR DUTTA

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## EDUCATION

### MSc. Computer Science, University College Dublin

Sep 2024 – Sep 2025 | Dublin, Ireland

**GPA:** 3.47 [2:1 Achieved]

**Relevant Coursework:** Machine Learning, Deep Learning, Generative AI: Language Models, Human-Centred AI, Text Analytics, Information Visualization, SQL Programming and Relational Databases.

### BTech. Computer Science, Manipal University Jaipur

Aug 2020 – Jul 2024 | Jaipur, India

**CGPA:** 8.5 [First-Class Distinction Achieved]

## WORK EXPERIENCE

### Intern, Adani Airport Holdings Ltd

Feb 2024 – Apr 2024

- Collaborated with a team for the integration of legacy systems with emerging technologies, resulting in improvements in operational efficiency as part of digital transformation initiatives.
- Contributed in the design and fine-tuning of a domain-specific LLM using proprietary data from Adani Airports to support internal reporting and analytics tasks.
- Adapted pre-trained transformer models for tasks such as document classification and information extraction in the context of airport operations, improving the reliability of NLP outputs in internal systems.
- Optimized model performance through hyperparameter tuning, distributed training, and low-latency inference techniques.
- Ensured timely reports and updates via Kanban boards within an Agile ecosystem.

### AI/ML Intern, Wictronix

Jun 2023 – Aug 2023

- Worked with a government organisation to deploy a traffic analysis system at over 25 critical traffic junctures.
- Developed a proprietary computer vision model utilizing RoboFlow and YOLOv8, achieving a 98% accuracy in real-time identification and labelling of speeding vehicles at high-traffic intersections.
- Improved model training and performance, reducing false positives and improving response time for traffic violations (from about 2s to <200 ms).

### Intern, DeFactoED

May 2023 – Jul 2023

- Created content related to recent educational trends such as the adoption of generative AI models in the classroom.
- Conducted surveys for 100+ top educational institutes across South-East Asia.
- Visualized key findings through infographics, enabling clear communication of trends and patterns to stakeholders.
- Collaborated with experts in the digital space, including members of the Turing Institute, to discuss developments in AI and its implications for education.

### IoT Intern, Yhills

Jul 2022 – Sep 2022

- Gained proficiency in Arduino microcontroller programming, integrating sensors, actuators, and communication modules, deploying IoT-based solutions for smart home automation.
- Implemented cloud-based remote monitoring by integrating MQTT protocols with ThingSpeak, enabling seamless data visualization and control.

## CERTIFICATIONS

- NVIDIA Certified Associate - Generative AI Multimodal
- Python For Data Science and AI by IBM
- Salesforce Developer Virtual Internship
- Microsoft Azure Machine Learning Credentials
- Generative AI Learning Paths by Google
- Cybersecurity Essentials by Cisco Networking Academy

More on my [LinkedIn](#)

## SKILLS

**Languages:** Python, R, SQL, C/C++, HTML/CSS

**Libraries & Frameworks:** Pandas, Numpy, Scikit, Matplotlib, NLTK, SpaCy, TensorFlow, OpenCV, Pytorch, LangChain, Keras, XGBoost, Streamlit, Seaborn, Plotly, Hugging Face Transformers

**Platforms:** *Cloud:* AWS (Lambda, EC2, S3), Google Cloud, Azure ML Studio; *Development:* Salesforce, IBM Watson, Visual Studio Code, Jupyter Notebook; *Utilities:* Docker, FastAPI, MLflow, Chainforge, GitHub Actions, Microsoft Office

**Databases:** MongoDB, MySQL, Supabase, Oracle

**Tools:** *Version Control:* Git, Github; *Visualization:* Tableau, Vega-Lite; *Agile Tools:* Jira, Kanban, Scrum

**Soft Skills:** Communication, Collaboration, Creativity, Adaptability

## PROJECTS

### CLI-Agent

UCD capstone project in which we developed an AI-powered assistant with MCP integration that lets you manage dev tools, environments, ports and processes, SSH/Git, VS Code extensions, and generate code using natural language; all from the convenience of your command line. Fully supports Windows, macOS, and Linux (Debian/Ubuntu based) with platform-aware install logic.

### MeetPlot

Developed an NLP pipeline to analyze meeting transcripts by parsing .vtt captions into structured segments with timing, speaker attribution, and questions. Used NLTK for sentiment analysis, collocations, and frequency insights; spaCy for named entity recognition; and NetworkX to model speaker interactions and topic relationships. Generated an automated PDF report (via ReportLab) integrating charts, word clouds, sentiment timelines, and key communication metrics.

### Counterfactual Visualization

xAI project in which I built a TensorFlow CNN on the Kaggle Cats vs Dogs dataset and engineered a gradient-based optimization engine that reliably flips model predictions while minimizing perturbations. Has end-to-end real-image loading and preprocessing, tuned loss functions for stability, automated evaluation metrics, and added visualization tooling that exports heatmap comparisons.

## LEADERSHIP & VOLUNTEERING EXPERIENCE

### Caveat Lector Publishing Team, Literature Society UCD

Oct 2024 – May 2025

- Established a clear support system for aspiring authors to get their work published in the Caveat Lector Magazine.
- Reviewed and selected articles and photos for the magazine.

### Teaching Volunteer, BGS National Public School India

Apr 2023 – Jan 2024

- Taught 30+ Right To Education students from impoverished backgrounds; various subjects such as English, Mathematics and Computer Science at a middle school level.
- Developed teaching materials such as PowerPoint Presentations, worksheets and charts.

### Technical Lead, ACM - MUJ Student Chapter

Sep 2020 – Dec 2022

- Delivered talks on topics like Explainable AI (XAI) and ChatGPT to over 200 Freshmen as a part of our AI Literacy Month event (one of my undertakings).
- Conducted and finished as a Top 3 team in hackathons like Defi-Hacks, Ctrl-Alt-MUJ (won), CryptX and Code Relay.

### Curation Co-Lead, Litmus MUJ

Feb 2022 – Dec 2022

- Worked as part of the Content and Promotions working teams.
- Curated books and articles for Dead Reader's Society, our monthly bookclub.
- Organized events on an inter-collegiate scale (1000+ attendees).