ABHISHEK SABNIS

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Machine Learning Engineer with 2 years of experience designing, deploying and scaling ML systems. Applied ML to high impact areas such as environmental system, telecom infrastructure, healthcare

EDUCATION

Imperial College London: MSc Computing (AI and ML) ***London, Sep 2024 – Sep 2025***

- Relevant courses: Computer Vision, Deep Learning, Privacy Engineering, Deep Graph Learning
- Expected grade: Distinction

IIT Hyderabad: BTech Mechanical Engineering, Minor in Artificial Intelligence ***India, 2018 – 2022***

- Relevant courses: Probability and Statistics, Calculus, Foundations of Machine Learning
- Top of class (Silver Medallist) with CGPA of 9.64

WORK EXPERIENCE

NTT Advanced Technology ***Tokyo, Nov 2022 – July 2024***

Machine Learning Engineer

- Accelerated Anomaly Detection algorithm by **reducing runtime by 70%** (7 days to 2 days). Deployed across **7000+ sectors**, improving network reliability for millions of users
- Identified critical modelling flaws in Autoencoder and proposed new approach to **isolate anomalies**
- Co-developed **object detection** application for satellite images in partnership with research lab
- Designed and implemented an **OSPF algorithm**, collaborating with 4+ cross-functional teams to address **large-scale telecom network failures** in Saitama, Japan
- Optimized time series model through hyperparameter tuning, achieving **8.9% RMSE reduction**

NTT Advanced Technology ***Tokyo, May 2021 – July 2021***

Summer Intern

- 3-month summer internship evaluating the viability of SOTA Computer Vision solutions
- Integrated segmentation as aux loss into Covid-19 classifier to identify abnormalities in X-ray image

RESEARCH EXPERIENCE & PROJECTS

Predicting Air pollution from sparse points using Generative AI ***Apr 2025 – Sep 2025***

- Proposed a generative modelling approach to reconstruct **spatial temporal air pollution** field (PM2.5, NO2, O3) from sparse sensor points, trained on simulation data
- Developed and benchmarked **diffusion models** against CNN and Transformer based methods.
- Aimed to support climate change mitigation and urban planning through environmental monitoring

Graph Super Resolution for Brain Connectivity ***Feb 2025 – Mar 2025***

- Developed a **Generative GNN** for reconstructing high-resolution brain connectivity graphs from low resolution fMRI data.
- Utilized eigenvector-guided adversarial regularization, achieving MAE of 0.14, outperforming SOTA

Acute Kidney Injury Detection Software for Hospital Systems ***Jan 2025 – Mar 2025***

- Deployed a ML solution onto Kubernetes cluster, achieving F3 score > 0.98 and latency < 1s
- Engineered ML pipeline using **RabbitMQ, SQL**, and **Prometheus** for monitoring and fault tolerance

Multiple Object Tracking with YOLO and Kalman Filter ***Nov 2024 – Dec 2024***

- Built an object tracking pipeline optimized for occlusion, dynamic motion and varying camera angles
- Utilized YOLO to **detect objects** and SIFT descriptors for **reidentification**
- Engineered the workflow for video frame preprocessing, motion smoothening and association logic

TECHNICAL SKILLS

- ***Programming***: Python (NumPy, OpenCV, PyTorch, Pandas, Scikit-learn), MATLAB
- ***ML and AI***: Computer Vision, Graph Neural Networks, Generative AI, Time Series Forecasting
- ***Cloud and DevOps***: AWS (EC2, S3), Docker, Kubernetes, RabbitMQ, Prometheus
- ***Tools and Frameworks***: GitHub, SQL, Streamlit, Grafana