George Jose

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Profile

Machine Learning Engineer & Researcher with over three years of experience managing the full model lifecycle - from custom dataset curation to deployment. Currently working in medical AI safety and explainability with a track record of translating academic research into functional, scalable applications.

Experience

Research Assistant, Australian Institute for Machine Learning – Adelaide October 2025 – Present

- Developing deep learning architectures for 3D dental point cloud analysis to provide interpretable, case-based reasoning for clinical predictions.

Research Intern, Australian Institute for Machine Learning – Adelaide Sept 2024 – Nov 2024

- Developed a *PointNet++* pipeline to localise dental landmarks on 3D dentition point clouds precisely
- Achieved <1mm accuracy on 91% of test landmarks

Project Research Assistant, Indian Institute of Technology, Bombay – India Mar 2020 – Mar 2023

- Designed and engineered DRISHT-E, a video-based traffic analytics platform for non-lane-based traffic
- Curated a drone dataset of 186k frames with 4M vehicle annotations

Education

University of Adelaide, Master's in Artificial Intelligence and Machine Learning Sept 2023 – Sept 2025

- GPA: 6.75/7
- Coursework: Deep Learning, Computer Vision, Machine Learning tools, Probability and Statistics

Rajagiri School of Engineering and Technology, Bachelor of Engineering and Technology 2015 – 2019

- GPA: 8.6/10

Projects

AI Safety in Medical Imaging: Interpreting Demographic Disparities via Internal Signal Probing, Part of Master's Research

- Auditing CheXagent's chest X-ray predictions for demographic bias by linking performance disparities across gender, race, and age to internal model confidence signals
- Probed model using forward hooks to capture internal signals from vision and decoder modules
- Clear subgroup disparities in TPR and FPR for certain pathologies, with both under and over-detection patterns

DRISHT-E: Traffic Analytics Platform GitHub

- Created a comprehensive video-based traffic analytics platform designed for non-lane based traffic scenarios
- Developed detection models and a hybrid tracking system for traffic analysis in complex non-lane based environments

Dental Landmark Detection System

- PointNet++ pipeline for precise dental landmark localisation on 420 3D maxillary dental casts
- High accuracy with an average landmark detection error of 0.6 mm
- 2 stage pipeline for coarse detection and fine localisation
- <1mm accuracy on 91% of test dataset with 504 landmarks

Publications

A deep learning model to automatically identify palatal landmarks on three-dimensional dental casts June 2025

Under Review, International Journal of Dentistry

Automatic Detection and Classification of Vehicle Class in non-lane based Traffic Conditions Using Drone Data May 2025

EASTS 2025 Conference (Non-Peer Reviewed)

Complex Hygroscopic Behavior of Ambient Aerosol Particles Revealed by a Piezoelectric Technique April 2024

ACS Earth and Space Chemistry

Leadership & Volunteering

Cognizant, Cochin Infopark – India

- Led the Cognizant Digital Maker Challenge (2019)
- Directed a winning team in the Cognizant Maker Hackathon on IoT and Digital Assistance (2018), securing First Prize for project innovation

Open Insulin Foundation, Volunteer, Engineering Division Aug 2021

- Contributed to the development of image segmentation models for fungal growth experiments supporting open-source insulin research

Rajagiri School of Engineering and Technology, India, Workshop Tutor 2017 – 2019

- Led one-day workshops on Deep Learning with Keras (2019), Introduction to Deep Learning with TensorFlow (2018), and Introduction to TensorFlow and Deep Learning (2018)
- Delivered a guest lecture on Python Programming for Computer Science students at ILM College of Engineering and Technology (2017)

Skills

Programming & **ML:** Python, NumPy, Pandas, PyTorch, Tensorflow, SQL

Accelerated ML: PyTorch, CUDA, JAX, ONNX, Cuda Profiler

MLOps & Cloud : Google Cloud Vertex AI, Docker, Git

References

Dr Nikhil Kurian: Post-Doctoral Researcher, Australian Institute for Machine Learning
nikhil.kurian@adelaide.edu.au

Dr Vinayaraj VS: Research Scientist, Indian Institute of Technology Bombay
vinayarajvs@iitb.ac.in