# Gavin DSouza

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EDUCATION

University of California Santa Cruz - Santa Clara, CA
M.S. in Natural Language Processing — Sep 2024 - Mar 2026

Manipal Institute of Technology
B.Tech. Electronics and Instrumentation Engineering
Minor Specialization: Computational Intelligence — Jul 2018 - Jun 2022

SKILLS

- **Languages:** Python, C/C++, SQL
- **Frameworks:** PyTorch, TensorFlow, HuggingFace Transformers, spaCy, NLTK, Flask
- **Libraries:** Numpy, Pandas, OpenCV, Scikit-learn, Matplotlib, Darts, Optuna
- **Tools:** Git/GitHub, Linux, MongoDB, Docker, Google Colab, VS Code, AWS, W&B, MLflow

WORK EXPERIENCE

Royal Datamatics Pvt Ltd (BlueKaktus) — Jul 2022 – Apr 2024
AI Specialist — Bengaluru, India
- Implemented an OCR solution to automate the process of extracting key product data from Garment Tech Packs.
- Built a multi-task image classification dataset of 50,000+ fashion products with 10+ tags by scraping retail sites using Beautiful Soup, and trained the company's first automated product tagger.
- Enhanced a VMI product's Sales Rate computation algorithm using parallel processing, leading to a 7x speedup.
- Developed a data reporting system that linked to BI tools, enabling clients to instantly analyze and visualize sales forecasts, enhancing decision-making efficiency.

Royal Datamatics Pvt Ltd (BlueKaktus) — Mar 2022 – Jun 2022
Software Engineering Intern — Bengaluru, India
- Built a dense retrieval image search feature using a deep learning classifier and KNN, allowing clients to find similar products by image.
- Developed a TensorFlow/Scikit-Learn model to estimate product manufacturing costs based on the component list with over 92% accuracy.

PUBLICATIONS

- **Gavin Dsouza** "AlterNet-K: A Small and Compact Model for the Detection of Glaucoma" *Biomedical Engineering Letters (BMEL)* 2023 [Paper here]
- **Gavin Dsouza** "Localization of Lung Abnormalities on Chest X-rays using self-supervised Equivariant Attention" *20th Asian Oceanian Congress of Radiology and 78th Conf. of the Korean Society of Radiology. Biomedical Engineering Letters (BMEL)* 2022 [Paper here]
- Atharv Tendolkar; Amit Choraria; M M Manohara Pai; S Girisha; **Gavin Dsouza** "Modified crop health monitoring and pesticide spraying system using NDVI and Semantic Segmentation: An AGROCOPTER based approach" *2021 IEEE International Conference on Autonomous Systems (ICAS)* [Paper here]

PROJECTS

Glaucoma Detector — May 2022
Python, PyTorch, Streamlit
- Leveraged ResNet and Vision Transformer (ViT) architectures to analyze retinal images, enabling Glaucoma detection.
- Developed a Streamlit-based interface for users to upload and process images through deep learning models.
- Generated Heatmaps to highlight retinal regions contributing most to predictions, supporting real-time inference with localized browser interaction.

Anime Face Generator — Sep 2021
Python, PyTorch
- Developed a GAN-based model to generate unique anime characters, gaining hands-on experience with GAN architectures.
- Leveraged a CNN to train on a diverse anime dataset, exploring the model's capacity to learn complex visual features.