

VIKRANT KAMBLE

📞 801-441-9784 ✉ vikrant.kamble1990@gmail.com 🌐 linkedin.com/in/vikrant-a-kamble
🐙 github.com/VikrantKamble 🏠 vikrantkamble.github.io

TECHNICAL SKILLS

Languages & Frameworks: Python, SQL, PyTorch, PySpark, TensorFlow

Technologies: Jupyter, Cnvr, Labelbox, Neptune.ai, BigQuery, AWS Athena, GCS, EC2, S3, Git, Confluence, JIRA, Docker, Bash

Libraries: NumPy, SciPy, Pandas, Scikit-learn, OpenCV, NLTK, Transformers, Catboost, Bokeh, Seaborn

Certifications: Generative AI with LLM, Coursera – (2024) | Deep Learning Specialization, Coursera – (2024) | Machine Learning, edX – (2017) | Databases and SQL for Data Science, Coursera – (2020) | AWS associate developer, AWS – (2018)

EXPERIENCE

Machine Learning Engineer

Mar 2020 – Mar 2024

Cape Analytics

Palo Alto, CA

- Pioneered and built a robust multi-head CNN model training pipeline that utilizes multi-view aerial imagery.
- Engineered cutting-edge computer vision models predicting number of stories, garage type, and size with 33%, 42%, and 38% lift in accuracy compared to public records.
- Built and put into production novel computer vision models to detect dormers and attic windows in single-family homes, achieving a recall rate of 91% and 86% respectively.
- Conceptualized and implemented a deep learning model to estimate living area of residential properties, leading to a 40% reduction in error compared to tax assessor.
- Enhanced and expanded the ground-truth collection pipeline, improving the workflow by 30%.
- Spearheaded the integration of a third-party service for monitoring and quality control across 150+ models in production.
- Explored usage of CLIP and Dino-V2 model embeddings to improve quality grade and living area models using 75% less data.
- Achieved 20% increase in model development efficiency by contributing to core infrastructure modules, data sampling, analysis, and visualization packages.

Data Science Fellow

Sep 2019 – Mar 2020

Insight Data Science

San Francisco, CA

- Designed a low-latency Python pipeline to optimize a biotech company's drug discovery process, resulting in a 35% reduction in false-positive rate.
- Leveraged image segmentation techniques to optimize fluorescence image data quality, increasing signal-to-noise by 30%.
- Conducted feature engineering and Gaussian mixture modeling, achieving an accuracy of 92%.

Graduate Student Researcher

May 2014 – May 2019

University of Utah

Salt Lake City, UT

- Applied Bayesian modeling to estimate the opacity of the intergalactic medium from a sample of 50,000 quasar spectra.
- Utilized outlier rejection techniques, data sampling, and non-linear regression for parameter estimates with 2.8% accuracy.
- Adapted Gaussian Process regression and topological data analysis to reconstruct the 3D density of the intergalactic medium.
- Developed persistent homology methods to quantify the size distribution of cosmological voids.

PROJECTS

Cuisine prediction | Python, Scikit-learn, NLTK, Matplotlib

Nov 2023 – Dec 2023

- Applied Bag-of-Words and TF-IDF approach to classify recipes into various cuisines and achieved a classification accuracy of 79% and f1-score of 77% using logistic regression.

Sentiment Analysis of IMDB reviews | Python, PyTorch, LLMs, HuggingFace

Dec 2023 – Jan 2024

- Performed binary classification of IMDB movie reviews by using tokenization and fine-tuning BERT using PyTorch, achieving an accuracy of 88%.

Plastic detection using YOLOS | Python, PyTorch, CNN, HuggingFace

Jan 2024 – Feb 2024

- Developed object detection pipeline to identify plastic pollutants from images of waterbodies by fine-tuning the transformer model YOLOS for this task, achieving 80% accuracy.

Driveway segmentation | Python, PyTorch, CNN, Google Colab

Feb 2024 – Present

- Applied instance segmentation using Mask-RCNN to segment driveways in aerial imagery of residential properties, achieving a mean precision of 81%.

EDUCATION

Ph.D. in Astrophysics

Aug 2013 – May 2019

University of Utah

Salt Lake City, UT

B.Tech in Engineering Physics

Aug 2008 – May 2012

Indian Institute of Technology Delhi

Delhi, India