KAUSHIK GANESAN

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Key Skills

- Proficient in Python, SQL, Machine Learning, Statistics and Linear Algebra.
- Strong academic standing in Classification, Regression, Clustering, Computer Vision, Deep Learning, Natural Language Processing, Information Visualization using Tableau and D3.js and Information Storage and Retrieval

Education

Virginia Tech   **August 2021 – May 2023**

Master Of Engineering in Computer Engineering, Blacksburg, Virginia   *GPA:3.88/4.00*

Relevant Course work: Advanced Machine Learning, Computer Vision, Deep Learning, Data Analytics, Applications of Machine Learning, Information Storage and Retrieval, Information Visualization, and Cybersecurity and IoT

SASTRA University   **July 2014 – May 2018**

Bachelor Of Technology in Electrical And Electronics Engineering, Thanjavur, India   *GPA: 8.30/10.00*

Relevant Course work: Data Structures And Algorithms, Object Oriented Programming in Java.

Achievements: Received Dean's Merit Scholarship for the academic years 2016-17, 2017-18

Technical Skills

Languages: Python, Java, D3.js, SQL, C, C++, HTML, CSS

Tools: Tableau, Docker, Git, Microsoft Excel, MATLAB, Eclipse, Pycharm, Jupyter Notebook, Oracle DB

Python and Machine Learning Libraries: Scikit-learn, PyTorch, Tensorflow, Keras, Open CV, NLTK, spaCy, Numpy, Pandas, Matplotlib, Seaborn, Scipy, HuggingFace, Surprise, Sly, Imbalanced-Learn, Flask

Experience

GlobalFoundries   **June 2022 - August 2022**

Intern   *New York/Remote, Offsite, United States*

- Enhanced the **Machine Learning** capability of the Design Rule Check (DRC) tool through exploring various preprocessing techniques, sampling techniques, and Machine Learning algorithms. Boosted the classification accuracy from **86%** to **89%** for NLP tasks.
- Transformed the existing code into an organized and efficient **Object Oriented design** using **Python**.
- Contributed to the development of a **parser** utilizing the **SLY** module in Python to effectively parse statements into the desired format.

Tata Consultancy Services   **October 2018 – June 2021**

System Engineer   *Bangalore, India*

- Boosted corporate revenue and streamlined the design and verification process for the placement and engineering parameters of wayside equipment in **Communication Based Train Control systems (CBTC)** for Urbalis 400 and Urbalis 500 solutions, reducing man-hours.

Projects

Discipline Classification and Chapter Summarization | *PyTorch, HuggingFace*   **December 2022**

- Experimented with state-of-the-art language models, including **BERT, RoBERTa, SciBERT, and Longformer** to classify disciplines in chapters of Electronic Thesis Dissertations (ETDs).
- Experimented with **extractive (TextRank, LexRank) and abstractive(BigBird) summarization methods** to summarize long text chapters.
- Packaged the machine learning solution in **containers**, made it production-ready using **Flask**.

DSLR-esque Image Enhancement | *Tensorflow, Keras, Open CV*   **May 2022**

- Improved **Image Quality** by minimizing Content Loss, Color Loss, Texture Loss, and Total Variational Loss, resulting in a **19.78 PSNR and 0.91 M-SSIM** on a collection of 11,000 iPhone images.
- Trained a **Generative Adversarial Network** (GAN) consisting of a **Deep Residual Network (ResNet)** as the generator and a **Convolutional Neural Network (CNN)** as the discriminator. Conducted experiments to optimize performance by varying the number of residual blocks in ResNet and the number of convolution layers in the CNN.

Stock Prediction | *Scikit-learn, Pandas*   **May 2022**

- Implemented multiple classification algorithms, including **Logistic Regression, Artificial Neural Network, Ensemble of Support Vector Machines, xGBoost, and Random Forest**, to predict the profitability of investing in IBM stocks if held for 28 days. Achieved a **90% accuracy** rate using Random Forest.
- Applied various regression algorithms, including **Linear Regression, Multilayer Perceptron Regressor, Ensemble of Support Vector Regressor, xGBoost Regressor, and Random Forest Regressor**, to predict the price of IBM stock. Achieved a **low Mean Squared Error and high R-Squared value** using the **xGBoost** algorithm.