

# AVINASH R

+91-9629149765    ravinash218@gmail.com    avinash218    avinash-218    Portfolio-Website    Hashnode

## EDUCATION

### MEPCO SCHLENK ENGINEERING COLLEGE(TIER -1)

Bachelor of engineering in Computer Science – CGPA : 8.72

Sivakasi, Tamil Nadu

Aug. 2019 – April 2023

## FULL TIME / INTERNSHIP

### Research

Sept 2022 – Present

#### GDD

- Working on a research project focused on developing a new variant of regenerative Generative Adversarial Network to reconstruct facial images from occluded images.
- Specifically utilizing the CK+48, BAUM-1 and other facial data sets for the project.
- The primary objective of the project is to achieve accurate reconstruction of facial images.
- The secondary objective is to apply emotion classification techniques to the reconstructed images.
- Planning to publish the results of the research in a reputable journal upon completion.

### DeepSphere

Jan 2022 – July 2022

#### Data Science Intern

Chennai, India

- Worked on 3 projects such as Conversational AI, Stationarity Analysis and Stationary Transformation, Boosting Techniques as follows.
- **Conversational AI**
  - Developed text, voice, and knowledge graph-based chatbots for the project.
  - Implemented artificial neural networks in both voice and text-based chat-bots.
  - Used Resource Description Framework to create the knowledge graph for the knowledge graph-based chatbot.
  - Implemented SPARQL in RDF library to query the knowledge graph and extract output based on user input.
  - Tools and Technologies – Keras, Nltk, Streamlit, Flask, Spacy, Tkinter, and Git.
- **Stationarity Analysis and Stationary Transformation**
  - Worked on time-series data to analyze its stationarity property using statistical tests including Rolling statistics test, Augmented Dickey–Fuller test, Zivot Andres test, etc.
  - Transformed non-stationary data to stationary data by logarithmic and derivative transformation and made compatible for modeling with Recurrent Neural Networks.
  - Tools and Technologies – Git, Sklearn, and Stats-Models.

## PROJECTS

### OPEN-SOURCE CONTRIBUTOR | ML, AI, Python, C, C++, Java, Git

Present

- **AI-Playground**
  - \* Repository showcasing proficiency in Machine Learning, Deep Learning, and data science, including supervised, unsupervised, semi-supervised, and reinforcement learning techniques.
  - \* Projects and works included in the repository demonstrate abilities and understanding in these areas, covering topics such as neural networks, regression, classification, convolution, augmentation, transfer learning, boosting, hyperparameter tuning, overfitting, generative adversarial networks, clustering, autoencoders, and association rules.
  - \* WebPage
- **Computer Science Projects** – With C, C++, Java, Python open-sourced some notable Repositories – Computational Intelligence Concepts, Application Development, Data Structure Concepts, Algorithms, Operating Systems Concepts, Decision Making Methods, Compiler-Techniques, Computer Networks Concepts, Website Development.

### Semi-Supervised Learning on Fashion Dataset | Python, Keras, Scikit-Learn, WandB

- Harnessed the power of both worlds - supervised and unsupervised learning on Fashion Product Images Data set in Kaggle.
- Utilized pre-trained VGG16 model to extract features from the dataset.
- Features were reduced using Principal Component Analysis (PCA).

- Kmeans clustering was applied on reduced features to cluster them into 45 classes for classification.
- Blog – Hashnode [↗](#)
- Logs – WandB [↗](#)

### Fashion Generation GAN [↗](#) | Python, Torch, WandB

- Constructed a Convolutional Generative Adversarial Network (GAN) to generate new fashion images using the Fashion Product Images Dataset in Kaggle.
- Demonstrated hands-on experience in the field of generative models, particularly the state-of-the-art technology of Generative Adversarial Networks (GANs).
- Logs – WandB [↗](#)

### ANN Vs ANN + Feature Extraction Vs CNN [↗](#) | Python, Keras, Scikit-Learn

- Practically explored the effectiveness of Convolutional Neural Networks (CNNs) on image datasets using the Homer-Bart dataset from Kaggle.
- 3 different methods: Artificial Neural Networks (ANN), ANN enhanced with feature extraction based on colors, and Convolutional Neural Network (CNN)
- Evaluated the accuracy, computation time, and memory usage of all three models.
- Concluded that CNNs outperform ANNs in terms of accuracy, processing time, and model output size.
- Blog – Hashnode [↗](#)

### Achievements 4x

**TECHINNOVATE-'21** : (for Startup) Eligible for seed-funding from various Angel investors.

**Hacktoberfest'21** : Contributed four repositories

**Smart India Hackathon Finalist** : G2C2-an flood alert system

**Hexaware Data Science Engineer Challenge** : 58th rank – TechGig

### TECHNICAL SKILLS

**Skills** : Machine Learning, Deep Learning, Git, Data Visualization, Data Wrangling, MongoDB

**Languages** : Python, C, C++, Java, SQL

**Frameworks** : Keras, Pytorch, Tensorflow

**Developer Tools** : Git, Jupyter Notebook, Kaggle Kernel, Google Colab, Spyder IDE, Sublime, VS Code, PyCharm, NetBeans

**Libraries** : Pandas, Numpy, Matplotlib, OpenCV, PyTorch, Sci-Kit Learn, Plotly, Keras