Aditya Ori

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Education

California State University, Chico Aug 2023 - *now*
Master of Science in Computer Science (GPA: 3.7 / 4.0) *Chico, California*

- **Relevant Coursework:** Data Structures and Algorithms, Data Science, Graph Theory, Artificial Intelligence, Software Design and Maintenance, Object Oriented Programming, Advanced Machine Learning, Cybersecurity

University of Delhi 2017 - 2021
Bachelor of Engineering in Information Technology *New Delhi, India*

Projects

Neural Networks compared with Traditional Approach of Image Classifier

- The project explores the application of both neural networks and traditional computer vision techniques for shape classification. Built custom dataset generator of shapes with occlusion, rotation, noise, etc.
- Built a custom neural network from scratch using libraries like TensorFlow and Keras. The model consists convolutional layers to extract spatial features from the images and fully connected layers for classification.
- Implemented traditional machine learning classifiers using OpenCV. Performed statistical analysis on both approaches, comparing model accuracy, loss, etc.

Illustrations using Generative Adversarial Networks

- Utilized GAN to automate the generation of facial images.
- Trained DCGAN models on specialized animated facial image datasets. Enabled automatic creation of animated character faces based on input facial feature tags.

Supermarket Simulation using Priority Queues

- Simulated a supermarket checkout system using object-oriented programming. Implemented a priority queue for customer management, handling complex events like shopping and robberies, and utilized time-based event handling for realistic simulation flow.
- Managed file I/O for simulation parameters utilizing dynamic memory allocation and optimized algorithms for multiple concurrent events.

Image Super Resolution using CNN

- Devised and implemented a deep learning model employing Convolutional Neural Networks (CNN) to upscale image resolution. Employed a range of optimization techniques and built the model using TensorFlow.

Video Management System

- Implemented a linked list data structure to store and organize video information. Designed a sorting mechanism to order videos by title, rating, or length.
- Implemented file I/O operations to read commands and video data from user input with error handling to manage invalid commands and non-existent video entries.

Experience

Defence Research and Development Organisation (DRDO) March 2021 – April 2021
Software Engineering Intern *New Delhi, India*

- Used Java Card platform Workstation Development Environment (JCWDE) to debug Java card/ Smart card applets in a Java Card Runtime Environment (JCRE) using command protocol APDU (Application Protocol Data Unit).

Wings Automobile Products Pvt. Ltd. May 2020 – June 2020
3D Modelling Intern *Faridabad, India*

- Used CAD (Computer Aided Design) to create multiple models under supervision, using Blender (Open-source CAD software), that can be used to run simulations by the company's R&D department in their CAD & CAM software.

BGS International Public School August 2015 – February 2017
IT Coordinator & Graphic Designer *New Delhi, India*

- Organized IT related events and managed other school events and fests
- Produced more than 4 videos for school performances and competitions using VideoPad (video editing software), Adobe Photoshop and made newsletters using Microsoft Publisher.

Technical Skills

Languages: Python, C/C++, HTML/CSS, LaTeX.
Technologies: Python Scripting, SQL, Git, Wireshark, Splunk, MongoDB, Dockers, Valgrind, Jupyter Notebooks, OpenCV, Linux Command Line, Log Analysis, Figma, Tkinter.
AI / ML: CNNs, GANs, Pattern Recognition, Machine Learning models, NumPy, Pandas, TensorFlow, Keras, Matplotlib, Plotnine.