Shrenik Jain

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Education

Master of Science, Electrical and Computer Engineering - Machine Learning and Data Science **Present**
University of California San Diego (UCSD)

Bachelor of Technology, Electrical Engineering **May 2022**
Vishwakarma Institute of Information Technology (VIIT) - GPA: 9.47

Coursework: Data Structures, Design & Analysis of Algorithms, Machine Learning, Deep Learning, Neural Networks, Image & Video Processing, Cloud Computing

Work Experience

Data Scientist, Pivotchain Solutions **July 2022 - Present**
- Led the research and design of the RAVEN-AI System, developing algorithms for malicious event identification providing users with an intelligent surveillance platform, leading to a 65% reduction in missed security threats across critical sectors.
- Employed 3D ConvLSTM based Spatio Temporal Autoencoder to verify AI-generated video clips, capturing spatial and temporal representations for accurate true positive/false positive classification of potential security events.
- Developed a Video Management System adhering to the ONVIF standard, integrating capabilities such as multiobject tracking, ANPR, and facial recognition, enabling intelligent management of surveillance equipment across the network.

Software Development Intern, Qualys Inc. **Jan 2022 - July 2022**
- Employed multi-stage CI/CD pipelines via Groovy-based declarative pipelines, containerized builds, and configured Jenkins clusters to optimize and streamline microservices deployment workflows.
- Led the deployment orchestration of policy-compliant microservices across environments ensuring consistent, scalable, and auditable rollouts.

Research Assistant, Vishwakarma Institute of Information Technology **July 2021 - Dec 2021**
- Led the development of a research paper summarization system using BERT-based encoder to capture contextual semantics and generate abstractive summaries.
- Researched extensively on transformers & multi-head self-attention for enhanced language understanding and generation.

Machine Learning Engineer, Validus Analytics LLP **Feb 2021 - Dec 2021**
- Analyzed Vector-Quantized VAEs (VQ-VAEs) and Convolutional VAEs (Conv-VAEs) for unsupervised learning of complex data via latent representations and generative modeling.
- Implemented ConvVAE-based generative modeling for dataset enhancement, assessing reconstructed sample quality through Structural Similarity Index (SSIM) and Peak Signal to Noise Ratio (PSNR) to maintain perceptual integrity.

Consulting Experience

Machine Learning Consultant, Pixstory **Aug 2023 - Mar 2024**
- Contributed to building a Conversational Search System leveraging Large Language Models (LLMs) and Retrieval Augmented Generation (RAG) framework for contextualized retrieval and response generation.
- Introduced asynchronous requests into the system to optimize resource utilization through efficient multiplexing, and parallelizing execution, resulting in a 3x improvement in system throughput and hardware efficiency.

Machine Learning Consultant, AI for Rural **Sept 2021 - Nov 2021**
- Developed intuitive data visualization pipelines for insightful multi-dimensional data exploration and pattern analysis.
- Implemented unsupervised learning techniques like K-Means Clustering and Support Vector Machines (SVMs) for robust outlier identification, ensuring data quality for downstream machine learning pipelines.

Technical Skills

Languages: Python, Java, JavaScript, C++, Bash, SQL, HTML, CSS
Machine Learning: Tensorflow, PyTorch, Keras, LangChain, CUDA, Scikit-learn, OpenCV, NLTK, SpaCy, TorchServe, TritonServer, Hugging Face Transformers
Frameworks & Technologies: Flask, SpringBoot, FastAPI, Git, FFmpeg, Docker, Kubernetes, Jenkins, Linux, ONVIF
Databases: MongoDB, SQL, Milvus, Vector Stores

Projects

Face Physiognomy
- Develop a hybrid human face emotion recognizer using a combination of Haar cascades and CNNs that is capable of detecting fundamental emotions.

Vehicle Color Recognition
- Employed pre-trained Haar cascades for car detection in video frames, emphasizing color classification through a K-Nearest Neighbors algorithm trained on RGB color histogram distributions.