

# 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: 9.47/10.0

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

## PROFESSIONAL EXPERIENCE

**Machine Learning Engineer**, Pivotchain Solutions **Jul 2022 - Jul 2024**

- Led the design of the RAVEN-AI System, developing Computer Vision algorithms for malicious event recognition, providing users with an intelligent surveillance platform, leading to a 65% reduction in missed security threats.
- Employed ConvLSTM-based Spatio Temporal Autoencoder to verify AI-generated video clips, capturing spatial and temporal representations for accurate true/false positive classification of 10,000+ potential security events per day.
- Developed a Video Management System adhering to the ONVIF standard, integrating multiobject tracking, ANPR, and facial recognition, enhancing surveillance equipment management and reducing incident response time by 30%.

**Software Development Intern**, Qualys Inc. **Jan 2022 - Jul 2022**

- Designed multi-stage CI/CD pipelines using Groovy-based declarative pipelines and containerized builds, to streamline workflows and cut average deployment time from 30 minutes to 10 minutes.
- Led the deployment orchestration of policy-compliant microservices across 3 major environments, ensuring consistent, scalable, and auditable rollouts.

**Research Engineer Intern**, Vishwakarma Institute of Information Technology **Jul 2021 - Dec 2021**

- Led the development of a research paper summarization system using a BERT-based encoder to capture contextual semantics and generate extractive summaries.
- Researched extensively on transformers & multi-head self-attention for enhanced language understanding and generation.

**Machine Learning Intern**, 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, expanding a critical training dataset from 50,000 to 150,000 samples while maintaining high perceptual integrity (SSIM > 0.85).

## CONSULTING EXPERIENCE

**Machine Learning Consultant**, Pixstory **Aug 2023 - Mar 2024**

- Contributed to building a RAG-based Conversational Search System leveraging Large Language Models (LLMs) for contextualized retrieval and grounded 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.

**Software Development Consultant**, AI for Rural **Sept 2021 - Nov 2021**

- Implemented efficient data preprocessing and visualization pipelines for insightful data handling, intuitive data exploration, and pattern analysis.
- Developed RESTful APIs and integrated them with various data sources, enabling real-time data updates and reducing data retrieval time by 40% for critical agricultural information.

## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript, C++, Bash, SQL, HTML, CSS

**Machine Learning:** Tensorflow, PyTorch, Keras, LangChain, CUDA, Scikit-learn, OpenCV, NLTK, SpaCy, ONNX Runtime, TorchServe, TritonServer, TF-Serving, Hugging Face Transformers

**Frameworks & Technologies:** Flask, SpringBoot, PySpark, 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 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.