Astitva Veer Garg

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About Me

As a 3rd year student with a good knowledge of coding and a deep interest in the endless possibilities of technology. I have a good command in neural networks and generative adversarial networks, and I've been able to create innovative AI and ML explorations. My fascination with aerospace and planes has fueled my av-geek spirit. Moreover, my interest in research in computer vision drives my academic pursuits. Eager to contribute my skills to real projects, I am committed to expanding my horizons in both technical and research fields.

Education

SRM Institute of Science and Technology, Chennai CGPA: 9.6
Bachelor of Technology in Computer Science, Specialization in AI and ML *Expected 2025*

Shiv Jyoti International School, Kota CGPA: 9.34
High School (Class 11th and 12th) *2019-2021*

Technical Skills

Languages: Python, C/C++, SQL, JavaScript, HTML/CSS, Matlab, Java
Frameworks: Tensorflow, PyTorch, MongoDB, Flask, Rest-API, Qiskit, Node JS, Fast-API
Developer Tools: Git, AWS Cloud, Google Cloud Platform, MongoDB Compass, Postman
Libraries: pandas, NumPy, Matplotlib, OS, Open-CV, Scikit-learn

Experience

AI ML Research and Development Intern June 2023 – Present
IRDE, DRDO *Onsite/Hybrid*

- IRDE DRDO is the Instruments Research and Development Establishment Laboratory of Defense Research and Development Organisation.
- Onsite Internship starting July, 2023 to August, 2023, afterwards extended for 12 more weeks.
- As an AI ML Intern in IRDE DRDO, I am working on cutting-edge AI and ML technologies that are being used to develop new defense systems.
- Worked on different Deep Learning Algorithms such as Deep Convolutional GAN (DCGAN), Super Resolution GAN (SRGAN) and CNNs
- Learned optimising the Deep Learning Models and making them production ready for Embedded Systems Deployment.

Research Intern Feb 2023 - Dec 2023
Samsung R&D Institute India *Remote*

- Developing Camera Solutions and Designing a light weight binary classifier which can differentiate an image completely filled up with patterns from images which have centre of attractions
- Exploring classical CV based algorithms and use DIP techniques to find out patterns in an image
- Compared deep learning models and classical CV (opencv) models and benchmark model performances

DevOps Intern May 2022 – July 2022
F13 Technologies *Remote*

- Gained hands-on experience working with various cloud technologies such as Amazon Web Services (AWS), learned how to deploy and manage applications in the cloud, configure virtual machines, set up network and security features, and utilize cloud storage solutions.
- Worked closely with other members of the cloud team, including developers, system administrators, and project managers.

Next Tech Lab March 2022 – Present
SRM Institute of Science and Technology *Onsite*

- Collaborating with a team of researchers and industry professionals on projects focused on AI/ML, deep learning and different computer vision based algorithms.
- Conducted data analysis and created predictive models using Python and machine learning libraries such as TensorFlow and Scikit-learn.
- Assisted in mentoring new lab members and providing guidance on technical skills and research methodology.

Projects

AIDefenceNet | *Python, Keras, Wireshark, React, Flask, Random Forest, SVMs, Open-CV, Git*

- Implemented Random Forest with accuracy 98.6% and Support Vector Machines with 98.3% accuracy.
- Worked on a big dataset of around 9 Lakh records and with 85 distinguished and inclusive features.
- The project aims to detect the vulnerabilities in the networks inclusive routers, gateways and other network devices using AI/ML without using Indicators of Compromise.

Sehyog | *Python, Flask, Tensorflow, Keras*

- Developed a full-stack web application using with Flask serving a REST API with React as the front-end
- Implemented a Disease Detection Model using Naive Bayer's Algorithm on a vast data set for improved accuracy
- Designed and Developed a Medicare ecosystem for hospitals, doctors and patients.

Object Detection By Faster RCNN | *Python, Tensorflow, Keras, Open-CV, Git*

- Implementing Faster R-CNN object detection required a strong understanding of deep learning concepts such as convolutional neural networks (CNNs), object detection algorithms, and loss functions.
- Created the large dataset for the object detection system, and preprocessed the data.

Research Interests

Adaptive Image Generation using Generative Neural Networks

- Generative Neural Networks: AI models creating data like input. GANs, VAEs are common.
- Diverse Practical Impact: Personalized art, design, simulations—adaptive generation for context-specific, versatile applications.
- Adaptive Image Generation: Enhancing generative methods with adaptability. Conditioned on attributes, styles, enabling personalized output.
- Significance: Tailored images for art, design, science. Adaptation yields contextually relevant results. Useful for personalized content and dynamic scenarios.

Medical Applications of Computer Vision and algorithms.

- Enhanced Diagnostics: Computer vision analyzes medical images with AI algorithms, aiding early disease detection by identifying subtle patterns in X-rays, MRIs, and CT scans.
- Precise Surgery: Surgical robots use real-time computer vision feedback, guiding incisions and avoiding vital structures. Augmented reality assists surgeons in navigating complex anatomy during procedures.
- Personalized Care: Continuous patient monitoring via computer vision tracks vital signs, movements, and emotions. Insights inform tailored treatments and assistive technologies for improved healthcare outcomes.

Certifications

Building Video AI Applications at Edge using Jetson Nano

NVIDIA Deep learning Institute

- Link to Certification
- Completed NVIDIA's Jetson Nano certification, skilled in real-time video AI on edge devices, optimizing deep learning for enhanced applications, and boosting performance.

Getting Started with AI on Jetson Nano

NVIDIA Deep learning Institute

- Link to Certification
- Successfully completed the rigorous NVIDIA Certification for "Getting Started with AI on Jetson Nano," a comprehensive program offered by the NVIDIA Deep Learning Institute.

Building Transformer-Based Natural Language Processing Applications

NVIDIA Deep learning Institute

- Link to Certification
- Acquired in-depth knowledge and practical skills in designing, training, and deploying state-of-the-art transformer architectures for tasks such as language understanding, text generation, and machine translation.

Leadership Positions

Quantathon 1.0: Lead Organiser and President
Quantum Computing Club SRM: President (Present)
DBUG Labs: Club Mentor
The Product House X SRMIST: Corporate Technical Head