Shravan Venkatraman

Third Year Undergraduate

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Academic Qualifications

Qualification	Institute	CGPA
B.Tech (Computer Science and Engineering)	Vellore Institute of Technology, Chennai	9.20/10.0
CBSE (XII)	SBOA School and Junior College	96.4%
CBSE (X)	SBOA School and Junior College	97.8%

Skills

- Python programming
- Machine learning
- Deep learning
- Mathematics for Machine learning and Deep learning
- Computer vision

Work Experience

R&D Consultancy Project | AI-Powered Calorie Monitoring and Food Waste Monitor App | Apollo Sindoori Hotels Limited (*Oct'23 – Present)*

Core Skills – Deep Learning, Computer Vision, Machine Learning, Mathematics for Depth Analysis.

Mentor: Dr. Kabilan.K, Assistant Prof. Senior Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai.

Scope	· Build an AI-powered app for real-time calorie tracking and food waste reduction and monitoring using Deep Learning and Computer Vision for Apollo Sindoori Hotels Ltd.
Strategy and Outcome	· Implemented **YOLO** (You Only Look Once) as the core technology for individual **Dish Recognition** and **Classification**. · Developing an **Intelligent Depth Analysis Algorithm** to quantify the caloric consumption from images using **Computer Vision**, and a predictive **Machine Learning** model to monitor food wastage and **optimize** meal plans. · Building an app using **Flutter** and **Python** for deployment and integrating the model.

Applied Research | Adverse Weather-Resilient Traffic Sign Recognition for Autonomous Vehicles (*July'23 – Present*)

Core Skills – Deep Learning, Computer Vision, Machine Learning, Mathematics for Computer Vision and Object Detection.

Mentor: Dr. Joe Dhanith.P.R, Assistant Prof. Senior Grade 1, Dept. of Computer Science, Vellore Institute of Technology, Chennai.

Scope	· Develop an Intelligent state-of-the-art Traffic Sign Recognition system using Deep Learning and Computer Vision to enhance performance under adverse weather conditions.
Strategy and Outcome	· Building a **Deep Learning** model for Traffic Sign Detection under different weather conditions. · Contributing to **Safer Autonomous Transportation** by developing a system to enhance **Traffic Sign Recognition** under adverse conditions. · Preparing to submit phase-1 idea under L&T's open innovation competition – **TECHgium.**

Machine Learning & Computer Vision Intern | Virtusa (*Aug'23 - Present*)

Core Skills – Deep Learning, Computer Vision, Object Detection, Machine Learning, Mathematics for Object Detection and Image Classification.

Scope	· Build a POC for real-time Face Recognition software to automate attendance tracking within VIT Chennai hostels.
Strategy and Outcome	· Utilized **OpenCV** to assemble an individualized dataset of students residing in the hostels at VITc. · Implemented **YOLO** (You Only Look Once) as the core technology to achieve real-time face recognition within the PoC. · Integrated a sample attendance tracking database using **Python and Django** framework**.** · Enhanced attendance tracking efficiency using automation, thereby reducing manual effort. · Obtained deep understanding of **Computer Vision**, with hands-on experience in **Deployment** and A**utomation**. · Acquired extensive knowledge on **deep learning**, **object tracking**, and **face recognition**. · Currently working on scaling the application and expanding the domain of the project.

Research | Smart Crop Protection Using AI-Driven Cotton Leaf Disease Detection (*Jun'23 – Oct'23*)

Core Skills – Deep Learning, Computer Vision, Object Detection, Machine Learning, Mathematics for Image Classification.

Mentor: Dr. Pandiyaraju.V, Assistant Prof. Senior Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai.

Scope	· Develop a novel efficient deep learning model to accurately detect diseases in cotton crops to explore significance of early disease detection in crop protection.
Strategy and Outcome	· Built 2 custom models using **deep learning** to classify diseases detected in cotton crops. · Provided a **comparative analysis** between the performance of the two proposed models. · Acquired hands-on experience in building deep learning models using **Attention Mechanisms** and **Ensembles**. · Obtained experience in the application of **Computer Vision** in the field of Agriculture. · Successfully completed the documentation of the research paper and currently in the course of submitting it.

Research | Improving Neuropsychiatric Diagnosis with Deep Learning in Schizophrenia Detection (*Jun'23 - Aug'23*)

Core Skills – Deep Learning, Computer Vision, Machine Learning, Mathematics for Image Processing and Classification.

Mentor: Dr. Pattabiraman.V, Professor Grade 1, Dept. of Computer Science, Vellore Institute of Technology, Chennai.

Scope	· Leverage deep learning to develop an efficient, lightweight 3D NIFTII image-based Schizophrenia Detection Model.
Strategy and Outcome	· Successfully built a **Machine Learning** model to identify Schizophrenic patients using **Neural Signal** data. · Developed an intelligent **Deep Learning** model to detect Schizophrenia from Functional **MRI** scans. · Acquired hands-on experience in **Machine Learning, Deep Learning** and **Medical Imaging**.

Research | Medical Imaging for Brain Tumor Identification, Localization and Segmentation (*Feb'23 –May'23*)

Core Skills – Deep Learning, Computer Vision, Machine Learning, Mathematics for Medical Imaging.

Mentor: Dr. Pandiyaraju.V, Assistant Prof. Senior Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai.

Scope	· Develop deep learning models to **identify, localize and semantically segment** the tumor region from 3D NIFTI Multimodal Magnetic Resonance Imaging (**MRI**) scans.
Strategy and Outcome	· Utilized **BraTS-2020** dataset for training the deep learning models. · Obtained deep experience in medical imaging preprocessing including **Image Fusion**, **Controlled Noise Removal,** and **Perceptual Correction.** · Developed individual **novel deep learning models** for brain tumor segmentation and classification. · Acquired immense experience in using **deep learning** and **graph** and **spatial attention mechanisms** in medical imaging. · Progressed through the implementation phase and currently in the process of documenting the research paper for submission.

Accomplishments and References

Academic	· Consistent 9+ CGPA holder since the beginning of Undergraduate. · Achieved centum score in Mathematics in class 10 CBSE exam. · Achieved school second rank in class 10 CBSE exam.
Social & Volunteer	· Volunteered for organizing marathons for a social cause at Vellore Institute of Technology, Chennai. · Published articles on Medium, in the fields of Python and Artificial Intelligence, contributing to global readership. · Provided help in education and mentorship in computer science and mathematics to peers and juniors in my school and university. · Conducted and coordinated events for Robotics Club and Game Development Club at Vellore Institute of Technology, Chennai. · Participated in a charitable initiative, along with the NCC club at SBOA School and Junior College, by providing food to the underprivileged. · Volunteered to offer one-on-one fitness and health guidance, providing personalized support to make positive lifestyle changes.
References	· **Dr. Pattabiraman.V,** Professor Grade 1, Dept. of Computer Science, Vellore Institute of Technology, Chennai. · **Dr. Joe Dhanith.P.R,** Assistant Professor Senior Grade 1, Dept. of Computer Science, Vellore Institute of Technology, Chennai. · **Dr. Pandiyaraju.V**, Assistant Professor Senior Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai. · **Dr. Kabilan.K**, Assistant Professor Senior Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai. · **Dr. Jenila Livingston**, Professor Grade 2, Dept. of Computer Science, Vellore Institute of Technology, Chennai. · **Mrs. Bhavani**, Computer Science teacher at SBOA School and Junior College. · **Mrs. Sheela Rani**, Mathematics teacher at SBOA School and Junior College.