Shruti Sriram

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Education

University of Texas at Austin — Austin, Texas
Master's in Computer Science — *August 2024 – May 2026*

Sri Sivasubramaniya Nadar College of Engineering — Chennai, Tamil Nadu
Bachelor of Engineering in Computer Science and Engineering — *August 2020 – June 2024*

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, HTML, CSS, Rust, Bash
Frameworks: React, Node.js, Django, Gradio
Developer Tools: Git, Android Studio
ML/DL Stack: TensorFlow, Keras, PyTorch
Graphics Software: Blender, GIMP

Experience

Graduate Teaching Assistant — August 2024 – Present
University of Texas at Austin — *Austin, Texas*
- Current responsibilities include assisting the students taking the Data Management course with the lab work, discussing possible approaches for the lab assignments and grading them.

Summer Analyst Intern — May 2023 – July 2023
Citibank — *Chennai, Tamil Nadu*
- Designed a billing feed automation pipeline using Apache Camel, Java, and SpringBoot that gets triggered on a daily, weekly, and monthly basis.
- Analyzed a geographical time series dataset and illustrated the findings through a comprehensive Tableau dashboard, significantly improving data visualization and hypothesis formation.

Software Development Intern — August 2022
Synergy Maritime — *Chennai, Tamil Nadu*
- Utilized Python, including libraries such as Pandas and NumPy, to analyze, process, effectively visualize, and summarize large datasets, which streamlined operations and contributed to an increase in the precision of results.
- Designed and implemented a website for ship details collection using HTML, CSS, and SQL Server, improving data management efficiency and user experience with intuitive navigation and faster data entry and retrieval.

Content Creation Intern — June 2021 – October 2021
Learning Room — *Chennai, Tamil Nadu*
- Prepared creative and illustrative learning material and verified the course content for Central Board of Secondary Education (CBSE) classes 9 to 12 and Joint Entrance Examination (JEE).

Projects

Segmentation and 3D Reconstruction of Cerebral Arteries — December 2022 – Present
- Developed a Computer Vision Model to segment cerebral arteries in order to detect abnormalities like aneurysms, embolisms, brain atrophy, and stroke. UNet and TransUNet were employed to segment the arteries at each slice, and K-Means Clustering and Canny Edge Detection were employed to identify point clouds to perform 3D reconstruction of 2D segmented masks.
- This project is being developed in collaboration with Istinye University, Turkey.

Multimodal Forgery Detection In Videos Using A Tri-Network Model — August 2023 – May 2024
- Created a tri-network model using Swin Transformer, Video Swin Transformer, and Wav2Lip models to detect forgery in audio, video, and audio-visual modalities, respectively, by overcoming the shortcomings of existing deepfake detection models.
- Introduced a video resolution enhancement element to the network to enhance the video clarity and to allow ease of face and background features detection.
- The model achieved a much higher overall accuracy of classification as compared to the existing works.
- Presented the findings at the 10th International Conference on Advanced Computing and Communication Systems ICACCS 2024 held at Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu.

Automatic Estimation of Fish Count in Aqua Farms — January 2022 – May 2024
- Conceptualized and developed a model using YOLOv8 and ByteTrack to count and track fish in frames captured in real-time.
- Built a pluggable product by loading the model onto Raspberry Pi and connecting it to a webcamera.
- This project was funded by Sri Sivasubramaniya Nadar College of Engineering, Chennai, Tamil Nadu.

Investment Portfolio Management System — January 2023 – June 2023
- Designed an investment portfolio tracking system using HTML, CSS, JavaScript, JSP, Java Servlets, and AJAX to keep track of the various shares purchased, the profit and loss margins, and to notify the managers and the users on when to buy or sell shares.

SemEval2023 - PoSh at SemEval-2023 Task 10: Explainable Detection of Online Sexism — November 2022 – February 2022
- Developed a machine learning model to analyze various comments and classify them based on the varying degrees of vulgarity and offense. An ensemble based on transformers like ALBERT, BERT, RoBERTa, DistilBERT, and XLNet was used. Majority voting algorithm was applied on the predictions to determine the final class for the comment.
- Most of the comments were classified into the right categories and the model can especially be useful to track and block accounts on social media posting offensive comments.

ImageClef - A Fusion Approach for Web Search Result Diversification Using ML Algorithms — January 2022 – June 2022
- Developed a Machine Learning model to improve the prediction accuracy of weaker models. An ensemble of KNN, SVR, and CART models was developed.
- Images are ranked based on the queries and the most suitable image is fetched which is useful in web search. The ensemble produces the final result with improved efficiency and accuracy.