Vivek Raju Golani

vgolani@cs.stonybrook.edu | vivek-golani | vivek-golani | +1–631-652-5852

Education

Stony Brook University — Stony Brook, NY, USA | Expected Graduation : Dec 2023
MS in Computer Science — GPA : 3.9/4.0
Coursework: Computer Vision, Big Data Analytics, Natural Language Processing, Operating Systems
Advanced Project: Multi-View Gaze Following

Birla Institute of Technology and Science, Pilani — Pilani, India | Graduation : June 2020
BE in Electrical and Electronics Engineering — GPA : 8.44/10
Coursework: Data Structures and Algorithms, Object Oriented Programming, Probability and Statistics
Teaching Assistant: Neural Networks and Fuzzy Logic

Technical Skills

Languages - Python, C, C++, Java, SQL, OCaml, JavaScript, R, HTML/CSS
Technologies - Linux, Hadoop, Spark, Git, AWS, Django, REST, MATLAB, Jupyter, Visual Studio
Libraries & Frameworks - PyTorch, Tensorflow, timm, MMCV, OpenCV, Pandas, Selenium

Experience

Computer Vision Intern - *Zebra Technologies* — Holtsville, NY, USA | May 2023 - Present
- Optimizing Vision transformers for semantic segmentation tasks and deploying them on edge devices.

Research Assistant (advisor: Dimitris Samaras) - *Computer Vision Lab* — Stony Brook, NY, USA | Jan 2023 - Present
- Building a Multi View Gaze dataset with over **37k** pairs of views with accurate point target annotations.
- Calibrated intrinsic and extrinsic parameters for 6 cameras with mean reprojection error of **3 pixels**.

Research Intern (advisor: Gang Luo) - *Harvard Medical School* — Remote | March 2021 - Dec 2021
- Employed SFM techniques to assist navigation for visually impaired people with body mounted camera.
- Designed a pipeline to estimate pose of query images from 3D point clouds, optimizing accuracy of the model **by 1%**.

Software Engineer - *Qualcomm* — Hyderabad, India | Jun 2020 - July 2022
- Automated fixing kernel crashes by employing web mining which reduced kernel upgrade efforts by **over 30%**.
- Designed an **upstreamable Linux kernel device driver** and **user space application** for seamless IPC over SPI.
- Modified various transport drivers in accordance to **Linux RPMSG and suspend frameworks** to support **Deep Sleep state** critical in optimizing power consumption for upcoming chipsets in the smart wearables segment.
- **Led a team of 3** for Snap development of user space entities for an Ubuntu Core IIoT platform.

Data Science Intern - *Piramal Enterprises Limited* — Mumbai, India | Jan 2020 - June 2020
- Developed a Retailer Analytics Rule Engine for their **INR 400 million** business of OTC and Baby products.
- **Profiled 0.25 million** retailers into 7 categories based on 5 custom features using GMM clustering algorithm.
- Augmented **sales by 20%** through a Google Maps web crawler creating a database of 1000+ untapped stores.
- Designed a Google News web extractor for the NBFC business to strategize approval and revival of loans.

Academic Projects

Surgical Skill Prediction using Unsupervised Tool Segmentation - Report — Stony Brook | Oct-Dec 2022
- Enhanced segmentation of tools for the JIGSAWS dataset by modifying existing cues and **incorporating optical flow**
- Achieved a skill prediction accuracy improvement of **2%** compared to the existing model.

Human-Aware Recurrent Transformer - Report — Stony Brook | Oct-Dec 2022
- Reinstated the importance of user-state by achieving **4%** higher accuracy than baseline GPT-2 for hate speech detection.
- Visualized the user-states to prove that no concrete groupings of users exists against their labels for downstream tasks.

Covid-19 Resource Prediction - Report — Stony Brook | Apr-May 2023
- Ascertained correlation between rising COVID cases and severity of substance abuse posts to be around **80%.**
- Employed ARIMA model for time series analysis of hospital bed and staff avability with prediction accuracy over **90%**.

Cognitive Prostheses for Goal Achievement — Remote | Oct 2019
- Implemented the research Paper - Cognitive Prostheses for Goal Achievement by Dr. Falk Lieder.
- Studied and designed a MDP model to compute optimal incentives for to-do list gamification.
- Proposed improvements to existing model by **incorporating dynamic priorities** in classification of tasks.

Text to Image Synthesis using StackGAN — BITS Pilani | Jan 2019 - May 2019
- Analysed the impact of StackGAN on the image quality for two datasets Caltech-UCSD Birds and Oxford-102.
- Employed Conditioning Data Augmentation to smoothen latent data and improved accuracy using ADAM optimization.

Achievements & Awards

- **Rising Star Award (Awarded to top 1% of fresh hires at Qualcomm)** — July 2021
- **Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship Award(All India Rank: 1300)** — April 2016