Shanmukha Sai Sumanth Yenneti

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Education

- **SUNY Stony Brook University** — Stony Brook, NY
  Master of Science in Computer Science; GPA: 3.75 — *Aug. 2021 – Dec. 2022*
- **Bennett University** — Greater Noida, India
  Bachelor of Technology in Computer Science and Engineering (Hons.) — *July. 2017 – July. 2021*

Programming Skills

- **Programming Tools** : Python, SQL, JavaScript, Linux
- **Frameworks** : PyTorch, Tensorflow, scikit-learn, Docker, Keras, OpenCV, Flask, ggplot2, Seaborn, D3.js

Experience

- **PARC, A Xerox Company** — Palo Alto, CA
  Computer Vision Research Intern — *May 2022 - Present*
  - **DARPA PTG : Multi-digit 7-Segment Number Recognition** | *PyTorch, OpenCV, Docker*
    - Created a custom neural network architecture based on **VGG16** that outputs multiple digits from any given image consisting a 7-Segment display with more than 97% accuracy.
    - Developed a pipeline that generates synthetic images with augmentations like CutMix to simulate real world 7-segment LCD displays which are then used for training the custom model.
  - **Self-Supervised Medical Image Segmentation** | *PyTorch, OpenCV, PyTorch Lighting*
    - Built a segmentation model using **SimCLR**, a Contrastive Learning framework, that is used to identify vasculatures present around tumor tissues in Breast Ultrasound Scans.
    - The framework learns to differentiate between tumor vasculature plus their augmentations and non vasculature plus their augmentation segments in an ultrasound to then segment the vasculatures.
  - **DARPA PTG : Egocentric Object State Detection using YOLOX**
    - Collected images of objects in different states for **Perceptually Enabled Task Guidance System** and trained **YOLOX for object detection** to detect objects having different states in thetask.
    - A Multimodal inference pipeline is built to display predictions from **Multiscale Vision Transformers** for Action Recognition, YOLOX for Object Detection and Custom VGG16 for 7-segment number recognition.
- **IIIT Delhi** — Delhi, India
  Machine Learning Intern — *Jan 2021 - Aug 2021*
  - **Privacy enabled Smart Home Network Anomaly Detection** : Created an ResNet34 and LSTM based network packet stream anomaly detection framework that was deployed on a low-end firmware Raspberry PI to detect attacks in a simulated smart home network.
- **D Cube Analytics (acquired by Trinity Life Sciences)** — Bengaluru, India
  Data Analyst Intern — *May 2020 - July 2020*
  - **KPI Identification** : Queried data from Databricks using MySQL and performed data analysis to produce multiple data visualizations which helped in identifying key performance indicators of the organizatiuon.
  - **Targeted Advertisement Recommendation System** : Designed a **Contextual Multi-Armed Bandits** based user specific recommendation engine that recommends the marketing content type and medium of marketing which the **click through rate** of the company advertisements by **52%**.

Projects

- **Human in Loop Medical CT Image Generation** using Deep Reinforcement Learning (**Deep Q Learning**) and **Style GAN**. The DRL generates the anatomical shapes using B Splines and the Style GAN synthesizes the texture detail to these shapes.
- **Dashboard for Public Health of USA** using D3.js to show the impact and trend of socio-economic factors over time
- **Criminal Sketch-to-Face Generation** Using CGAN and 40000 new Indian faces to remove bias from CelebA.

Publications

- **Classification of Humans and Animal Radar Signals using Multi-Input Mixed Data Model** | **[Link]** 2021
- **NEWS Article summarization with Pretrained Transformer(BERT & T5)** | **[Link]** 2020
- **Leading Athlete following UAV using MobileNet SSD (Visual Recognition)** | **[Link]** 2020