SHREYA SHRIRAM

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EDUCATION

University of Southern California *Expected 2026*
Masters in Computer Science - Multimedia and Creative Technologies Emphasis

University of California, Merced *May 2023*
B.S. Computer Science and Engineering

EXPERIENCE

Co-Founder - Technical Lead *Feb 2023 - Present*
PosTrue Inc. - CITRIS Foundry Accelerator, Research Spin Off

- Developing end to end wearable sensor iOS mobile app to handle user data, schedule measurements, and visualize muscle activity ***(Swift, Flask, PostgreSQL, REST)***
- Handle early business strategy activities: customer discovery, pitching, fundraising. **Won Blackstone Ideas Competition, $1000**

Software Development Intern - 3D Graphics *June 2023 - Aug. 2023*
Hypothetic Inc (Open Avenues Career Pathways)

- Implemented pipeline to generate 3D texture maps to color game assets. Utilized **Stable Diffusion - ControlNet** for stylization and Adam optimizer loop for texture map refinement ***(Python, Pytorch3D, OpenCV)***

Machine Learning Intern *June 2022 - Aug. 2022*
Epirus Inc

- Trained and tested sequential deep learning models, **RNN, LSTM, GRU**, to adaptively predistort RF waveforms for High Power Linear Amplification ***(Python, Tensorflow, Pandas, Scikit)***
- Developed AWS ETL pipeline **(S3, Lambda/Glue Jobs, RDS)** and preprocessing scripts. Streamlined preprocessing to augment training dataset at scale - *10GB/1hr* $\rightarrow$ *100GB/10min*
- Introduced and configured **weights and biases (wandb)** dashboard for dataset management, experiment tracking, visualization. Integrated **optuna** for hyperparamter tuning.

Signal Processing & Sensor Development Intern *Aug. 2021 - Aug 2022*
Pervasive Autonomous Networked Systems Lab - Advised by Dr. Shijia Pan, Ph.D

- Developed a fine-grained, wearable muscle sensor utilizing an **active vibration-based system**, integrated accelerometers and actuators to amplify low-frequency performance. ***(Arduino, C)***
- Wrote scripts for signal analysis using transforms **(Wavelet and Fourier)**, implemented **band-pass filter to increase SNR**, trained and tested **linear regression** model for muscle stiffness prediction ***(Python, Tensorflow, Numpy, Pandas, Scikit)***

Machine Learning & Image Processing Research Intern *Aug. 2020 - Aug. 2021*
Spencer Lab for Advanced Microscopy - Advised by Dr. Joel Spencer, Ph.D

- One of 15 undergraduates selected for NSF-CREST CCBM fellowship, awarded $2,400
- Implemented morphological and edge detection algorithms to parse 3D image stacks – color leave filtering, feature detection and matching, image segmentation, pruning ***(Scikit, PIL, OpenCV, Sklearn, Matplotlib, Scipy)***
- Designed and trained supervised ML model to automate cell identification using various regression, classification algorithms, PCA, Gini Impurity. Presented project at the **UC Systemwide Bioengineering Symposium**

PUBLICATIONS & PRESENTATIONS

Shreya S., Shubham R., Phuc N., Shijia P. *FinePose: Fine-Grained Postural Muscle Profiling via Haptic Vibration Signals*
ACM MobiSys, Workshop on Body-centric Computing Systems (BodySys) 2022

Shreya S., et al. *Sedentary Posture Muscle Monitoring via Active Vibratory Sensing*
ACM/IEEE Intl. Conference on Information Processing in Sensor Networks (IPSN) 2022, **Best Poster Award**

Shreya S., Kumaran A., Christian B., Joel S. *Cell Detection in the Cleared Thymus using Machine Learning*
21st UC Systemwide Bioengineering Symposium, Rapid-fire Session Computational Biology 2021

PROJECTS

V-ARM, Motion Tracking by Virtual Reality | ***Valley Children's Hospital - Software Engineering Capstone Project***
End-to-end application that administers and records a custom VR-based mobility exam to generate reports with key metrics.

- Developed web application for easy VR exam administration, patient reports, and results visualization. ***(Flask, PostgreSQL, REST)***
- Designed virtual environment and implemented gesture recognition and hand tracking for data collection and analysis ***(C#, Unity, Blender, Python)***

Interactive 3D Camera Fly-Through
Modeled an urban environment and integrated it into the scene through a custom **OBJ file loader**. Implemented **parametric Bezier curves** for smooth camera trajectory with **interactive control points** for scene navigation. ***(Blender, OpenGL, C++)***

Gestural Media Player
Web application that enables hand gesture based media playback controls for video. Trained **FNN** to label gestures based on **MediaPipe Hands** model landmarks. ***(Python, Javascript, MediaPipe, OpenCV, Flask)***

SKILLS

Languages: Python, C++, SQL, HTML/CSS, JavaScript
Libraries/Frameworks: Scikit, Numpy, Pandas, OpenCV, Pytorch, Tensorflow/Keras, ArcGIS, OpenGL, GLSL
Developer Tools: Git, Jupyter Notebooks, AWS Cloud (S3, Sagemaker, EC2), Agile/SCRUM, Jira