

SIDDHARTH SARAVANAN

sisaravanan@ucsd.edu ◊ (858) 319-5318 ◊ [ResearchGate](#) ◊ [GitHub Page](#)

EDUCATION

University of California, San Diego

Master of Science in Computer Science.
UC-GPA: 3.855/4.

Sept 2022 - Sept 2024

BITS Pilani K K Birla Goa Campus

Bachelor of Engineering. (Hons.) Computer Science.
Graduating CGPA: 9.55/10.

Aug 2018 - Aug 2022

TECHNICAL SKILLS

Programming	Python, Java, C, C++, C#, MATLAB.
Computer Graphics	OpenGL, Blender, Unity, Unreal Engine, Houdini.
Computer Vision	OpenCV.
Machine Learning	Python with NumPy, Scikit-Learn, Keras, TensorFlow and PyTorch.
Miscellaneous	Android Studio, Microsoft Hololens, Django framework.
Version Control	GitHub.

EXPERIENCE

Design Lab, UC San Diego

Research Assistant under Prof Nadir Weibel at Design Lab

Apr 2023 - Present

San Diego, USA

- Designed a Mixed Reality application (on the Hololens using Unity) to aid surgeons in performing the Sacral Neuromodulation procedure.

Samsung R&D Institute India - Bangalore

Research Intern at AR Vision Lab

Jan - Jun 2022

Bangalore, India

- Designed an ML model that considered phone hardware specs and AR scene details to predict the frame-rate at which the phone will run before having to render the AR scene (and warn the user about possible poor performance).

CSIR-CEERI, Pilani

Research Intern

May - Jun 2020

Pilani, India

- Worked on the project titled "Machine Learning Algorithms for Structural Health Monitoring". Used CNNs to predict the structural integrity of a building based on data recorded by accelerometers (during a simulated natural disturbance) placed on adjacent floors of the structure.

PROJECTS

Segmentation Algorithms for High-Resolution Images

May 2021 - Aug 2022

- Used morphological operations (such as thinning and pruning) and the Random Walker algorithm to perform image segmentation on high-resolution images and refine the segmentations made by deep learning models such as DeeplabV3+.

Deep Learning Framework for Optical and Microwave Image Matching

Jan - May 2021

- Developed a pipeline involving a GAN and a CNN that performed image registration on non-registered, cross-spectral remote sensing images.

Composition and Rendering of Bharatanatyam Performance in Augmented Reality

Aug 2020 - May 2021

- Designed an object-oriented algorithm that used Blender and its Python API to create animations of a dancer performing the Indian dance form of "Bharatanatyam" from a given list of 30-dimensional vector codes.

PREPRINTS

Siddharth Saravanan, Sravan Danda & Aditya Challa. A Robust Morphological Approach for Semantic Segmentation of Very High Resolution Images Matching, Preprint, [arXiv:2208.01254](https://arxiv.org/abs/2208.01254). [**Accepted with Major Revisions at IEEE Transactions on Image Processing**]

Nitin Sharma, & **Siddharth Saravanan**. Deep Learning Framework for Optical and Microwave Image Matching, Preprint, <https://doi.org/10.13140/RG.2.2.20314.88000/1>

ACADEMIC ACHIEVEMENTS

100% Institute Merit Scholarship

- Offered by BITS for academic achievement in my 2nd, 3rd and 4th Semesters. Awarded each semester to the top 1% of students of each batch based on CGPA.

Vertical Transfer

- Offered a chance to change my discipline to B.E Computer Science after my freshman year, by BITS, Pilani. It is only offered to exceptionally meritorious students.