

Sahil Mondal

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EDUCATION

University of Southern California, Los Angeles, USA

August 2022–May 2024

Master's of Science in Computer Science

Relevant Courses: Foundations of Artificial Intelligence, Web Technologies, Database Systems, Analysis of Algorithms

Dr. Vishwanath Karad MIT World Peace University, Pune, India

July 2018–June 2022

Bachelor of Technology in Computer Science and Engineering (CGPA: 9.74/10.0)

Relevant courses: Data Structures, Computer Networks, Operating Systems, Data Mining.

EXPERIENCE

USC Institute for Creative Technologies, LA, USA | Applied Research Intern

May 2023–December 2023

- Integrated **Segment Anything** and **Lama** models, driven by textual prompts, to build an **image inpainting system**.
- Optimized 3D terrain reconstruction with Neural radiance field (NeRF) manipulations adopting **Learned Perceptual Image Patch Similarity (LPIPS) loss**, generating **depth images** as geometric priors and **3D image inpainting** to yield **80% better results** than traditional NeRF models.
- Devised a training solution with enhanced terrain capture to offer a realistic geospatial foundation for the US Army.

Quidich Innovation Labs, Mumbai, India | Software Developer Intern

February 2022–July 2022

- Integrated **Yolov5**, **Fast R-CNN** with **Non-maximum suppression and Confluence** to model an accurate **real-time object tracking** system for cricket achieving **58 frames per second**.
- Attained a **98% accuracy** rate in real-time player **face recognition** by leveraging **Yolov5-face** model for face detection and **python face_recognition** library to extract facial encodings to match with encodings from test data.
- Collaborated with 2 interns to deploy the **dockerized** application for **20% more scalability** during prestigious cricket tournaments, including the World Cup 2021 and the Indian Premier League 2022. The live broadcast reached a viewership of **400 million** television viewers.

Canspirit Ai, Pune, India | Machine Learning Intern

March 2021–June 2021

- Led a team to create a **Flask web app** to extract crucial user info from PDFs using **text extraction** and **Named Entity Recognition models** obtaining a **94% overall accuracy** rate.
- Employed **Optical Character Recognition** tools like **Pytesseract**, **EasyOCR** with a **99% text extraction accuracy**, **UbiAi text annotation tool** for auto-labeling of custom entities and transformer language models (**BERT**, **ROBERTA**) to train on custom NER tags and respective tokens.
- Boosted a **25% increase** in company revenue following product launch, along with a case study.

TECHNICAL SKILLS

Languages: Python, R, C, C++, C#, Java, Flutter, SQL, HTML/CSS, Javascript, PERL

Frameworks & Technologies: Tensorflow, Pytorch, OpenCV, React Js, Express Js, Node Js, Bootstrap, Flask, MySQL, MongoDB, Unity, Hugging Face, Keras, Android, Scikit-learn

Cloud Platforms: Google Cloud Platform (GCP), Amazon Web Services(AWS)

Developer Tools: Git, MATLAB, Postman, Tableau, Power BI, ArcGIS, Excel, Docker, WordPress, Linux

PUBLICATIONS

Skin Lesion Classification using Deep Learning and Image Processing (Electronic ISBN: 978-1-7281-7089-3)

- Presented and published a paper on Skin Lesion Classification using Deep Learning and Image Processing at 3rd IEEE International Conference on Intelligent Sustainable Systems (ICISS), 2020.

PROJECTS

Counter COVID-19 Solutions

- Designed a system incorporating two integral features for corporations to aid COVID-19 prevention norms.
- Implemented Mobilenetv2 for face mask detection, Yolov3 model with a metric of Euclidean Distance to monitor social distancing.

Yelp Business Fetch Website

- Developed both a website and an android app utilizing React, Java and Xml, supported by a NodeJS backend to process and query data about details of businesses in the United States fetched via the Yelp Api and finally deployed the website to Google Cloud Platform.
- Combined user-friendly features such as input autocomplete, table display of businesses, business card with details, Google Map integration, past business reviews, and a reservation form module.

HONORS AND AWARDS

- Secured top 1 percentile in National Engineering Olympiad (April 2020) amongst 75000 students.
- Achieved top 2 percentile score out of 4500 applicants in course of 'Python for Data Science' offered by NPTEL.