SAHIL MEHRA

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EDUCATION

University of California San Diego *September 2022 - March 2024(expected)*
MS in Electrical and Computer Engineering (ECE)

Birla Institute of Technology and Science (BITS), Pilani *August 2016 - May 2020*
BE in Electrical and Electronics Engineering (EEE)

SKILLS

Python | PyTorch | Tensorflow | MLFlow | MLOps | Sci-Kit Learn | Pandas | AWS | Azure | CUDA
JavaScript | HTML | HTML5 | CSS | RESTful APIs | Node | React | MongoDB | Docker | Kubernetes

WORK EXPERIENCE

Gardyn Inc. San Diego, California
Machine Learning Engineer Intern *June 2023 - September 2023*

- Optimized model architectures for the available GPU resources leading to **reduction in daily inference time by ~66%** (from 6 hours to 2 hours) while also **improving the performance** of the models **by ~10%** using **PyTorch, Pandas, Azure, SQL** and **MongoDB**.
- Implemented a **custom boosting algorithm** to enhance the pest detection model's **precision rate by ~35%**, addressing a critical churn factor using **Python, OpenCV** and **Pandas**.
- Developed **custom metrics** to efficiently compare models in accordance with business priorities leading to **90% reduction** in deployment cycle time.

Mobile System Design Lab UC San Diego
Graduate Student Researcher *March 2023 - Present*

- Worked on all the 3D **computer vision** tasks for creating an end-to-end **Virtual Physiotherapist** (including **pose estimation** and **action recognition**) using **PyTorch, CUDA, Pandas, MLFlow, AWS, StreamLit** and **Docker**.
- Developed a novel repetition counting architecture that **beats the current SOTA by ~15%.**
- Built a **React Native** app that utilizes the phone's camera and our state of the art model to provide a seamless experience to both patients and doctor. Currently in use at **more than 10 clinics** throughout San Diego.

Oracle Bangalore, India
Software Engineer *September 2020 - September 2022*

- Designed and developed multiple enterprise level **distributed systems** for CX Sales Group, driving **$8 billion** of revenue annually using **HTML, CSS, Javascript, Oracle JET, Kubernetes** and **Oracle Cloud Platform**.
- Redesigned and developed the entire Oracle Sales hybrid mobile application using Oracle's **Javascript** framework, **RESTful API** and **Node.js**, and its composer which supports customization of the app using **Typescript**, improving the accessibility, UX and reliability of the app.
- Built a unified system of chatbots for sales teams using **JavaScript, Oracle Sales Assistant, Adaptive Cards** and **Block Kit**, providing unique platform specific features while maintaining common functionalities.
- Solely responsible for building the chatbot client on Slack. Currently used by **20,000+ employees** from **20+ enterprise customers**, serving **millions of license requests daily**.
- Built automation routines for unit testing of the chatbot applications using **NodeJS** and **Jenkins**.

Vision and AI Lab Indian Institute of Sciences (IISc)
Computer Vision Research Intern *December 2019 - June 2020*

- Successfully defended my undergraduate thesis on **Weakly Supervised Human Geometry Estimation From Monocular Images**.
- Developed a **self supervised** human mesh recovery framework to infer **human pose** and **shape** from monocular images in the absence of any paired supervision using **Python**, **CUDA**, **Blender** and **PyTorch** producing state-of-the-art accuracy of **91.84%** on BG-FG segmentation.
- Developed a procedure to automate production and visualization of quantitative and visual results for a paper that got accepted at the **European Conference on Computer Vision (ECCV) '20 oral**.

UST Global Trivandrum, India
Machine Learning Intern *May 2018 - July 2018*

- Responsible for developing **face recognition** (for customer identification) and **object detection** (to add the items picked up by the customers to their queue) features for cashier-less smart store using **Tensorflow**, **OpenCV**, **Flask** and **Python**.