| 858-319-6629
| asmaknikar@gmail.com

Ashish Maknikar

| Portfolio Website
in/ashish-maknikar-27704615b

Technical Skills

Software Development Java (Kafka · Spring · Hazelcast · Hibernate · Camel) | SQL (MySQL · SSMS) | Devops (GCP · AWS · Docker) | C++ | Python (BeautifulSoup · Selenium · Django) | JavaScript | React | ExtJS

AI, Robotics & Computer Vision Python (Tensorflow · Pytorch · OpenCV) | ROS | Gazebo | CUDA

Professional Experience

Software Development Engineer - Full Stack **Jun 2021 — Aug 2022**
Finmechanics Pvt. Limited

- Designed financial Bloomberg **FX data streaming**, static data management, currency position and trade tracking, **FX Swap/Fwds management**, and card rate publishing **services** for CIMB on the service-based **Java, React and ExtJS technology stack**.
- Spearheaded **continuous server deployment** and testing of features and fixes delivery for over **200 trading and sales UAT participants**.
- Collaborated to design and develop integration solutions with legacy client systems through **APIs and Camel file consumption routes**.
- Automated **Repo Trade management** according to the Bond Exchange of South Africa convention for Windhoek Bank,SA.

Software Development Engineer **May 2020 — Jul 2020**
Internship, Honeywell Technology Solutions

- Built a **Kafka micro-services** pipeline for ingesting, aggregating Iridium location reports, and merging them with other Honeywell location service providers and front-end services through **subscription and APIs**.
- Implemented a position prediction algorithm with **Kalman filters and Bayes** models to predict aircraft position in poor connectivity.
- Improved flight live-tracking services fidelity by conceiving and implementing push-based **WebSockets** on a **NodeJS** backend.
- Repurposed multiple third party tracking data for applications in UAV and aircraft tracking and communication services.

Computer Vision Engineer **May 2019 — Jul 2019**
Internship, Detect Technologies

- Deployed Industrial smoke-stack image segmentation using the self-supervised **segmentation model** in 'Tracking Objects via colorization'.
- Integrated and deployed neural network **(SRN-Deblur)** based motion de-blurring model for aerial drone footage.
- **Stitched multiple CCTV feeds** of industrial work site into a single mosaic, applied helmet detection model for workplace safety.
- Streamlined canvas mosiacing of video using **SIFT and ORB key-point tracking**, cleaing of drone footage using **histogram equalisation**. .

Web Developer **Jan 2023 — Mar 2023**
UC San Diego - Alon Orlitsky

- Design and maintenance for the 2023 **ITA Conference website** frontend and backend on a **React and Django stack**.

Projects

Software Development

- Designed and Developed a Custom **CRUD Database Management System** from scratch on a **C++ backend**. **[/link]**

Computer Vision/ Artificial Intelligence

- Implemented and trained a model for **text-to-audio Latent Diffusion Model** (AudioLDM) and **VAE** for medical **image generation**.
- Developed a pipeline for **pose detection** of objects in **3-D camera scenes** using a combination of **PointNet and ICP**. [/link]
- Developed Seq2Seq NLT model(using **Attention and Transformer** model), Image Captioning and Image Classification models./link
- Predicting vehicle pitch and yaw from dashboard mounted camera visual odometry using **DROID-SLAM and optical flow**.

Robotics

- **Summer Research Assistant** in the SASL lab working on **Lifted Koopman Controls** under Prof. Sylvia Herbert.
- Implemented **SLAM** for automobile (**visual inertial**), differential drive robot (**Particle Filter**) and camera tracking optimisation.[/link]
- Undergraduate Thesis on **Hybrid Motion Planning in 3-D environments for UAVs** on aircraft guidance and motion planning. [/link]
- **Second Position** in the **IGVC Autonomous Vehicle Challenge** for designing an autonomous bot for an obstacle course

Education

University of California San Diego Mar 2024
*Master of Science in **Electrical and Computer Engineering** (Intelligent Systems Robotics and Control)*
Coursework: Software Foundations II | Deep Generative Models | Deep Learning for 3-D Data | Statistical Learning | Sensing and Estimation in Robotics | GPU Programming | Mathematics for Machine Learning

Indian Institute of Technology (IIT) Madras May 2021
*Bachelor of Technology in **Robotics, Engineering***
Coursework: Fundamentals of Deep Learning | Probability, Statistics and Stochastic Process | Introduction to Data Analytics | Introduction to Robotics | Basic Graph Theory | Mechanics and Control of Serial Robots