






Saharsh Sandeep Barve

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EDUCATION

- **University of Illinois Urbana-Champaign** Urbana-Champaign, Illinois
MS in Computer Science; GPA: 3.94/4 Aug'23 - May'25
Relevant Coursework: Computer Vision, Cloud Computing, Applied Machine Learning, Web Programming, Software Engineering
- **Manipal Institute of Technology** Manipal, India
B.Tech in Computer Science and Engineering; GPA: 9.25/10 Jul'18 - May'22
Relevant Coursework: Operating Systems, Parallel Programming, Computer Networks, Database Systems, Data Structure and Algorithms

SKILLS SUMMARY

- **Languages** Python, C/C++, Javascript
- **ML** PyTorch, Tensorflow, CUDA, MLflow, TensorBoard
- **Vision** OpenCV, Image Processing, Object Detection, 3D vision
- **DevOps** Docker, Kubernetes, AWS (S3, ECS, Lambda, CloudFormation)
- **Database** SQL - Amazon RDS, MySQL; NoSQL - DynamoDB, MongoDB
- **Full-stack** React, TypeScript, REST, Node.js

EXPERIENCE

- **Dragonfruit AI** Menlo Park, CA
Software Engineering (Intern) May'24 - Aug'24
 - **Surveillance Software System:** Developed and enhanced AI-powered surveillance software for self-checkout systems to prevent fraud and theft, leveraging machine learning algorithms and video analysis.
 - **CLI Feature Development:** Created a Command-Line Interface (CLI) feature for suspicious incidents generation in the system, integrating self-documenting payload requests and ensuring robust incident reporting.
 - **Data Management with Qdrant Vector Embeddings:** Identified and resolved discrepancies by finding missing GTINs in qdrant versus transactions, improving the accuracy and reliability of the system.
- **Onward Assist** Bengaluru, India
Machine Learning Scientist (Full-time) Jul'22 - Jul'23
 - **Nottingham Grading Tool:** Led the development of machine learning models such as Nottingham Scoring algorithm boosting breast cancer diagnosis accuracy by 30% compared to our previous baseline.
 - **Deployment:** Integrated ML models into the web platform, utilized AWS and Kubernetes for scalable deployment, and optimized data workflows with MLflow and Apache Parquet.
 - **HuBMap + HPA:** Led team to top 8% in HuBMap + HPA Kaggle competition, showcasing expertise in large-scale biomedical data analysis.

PROJECTS

- **3D Vision - Scene Reconstruction:** Conducted a study on 3D scene reconstruction concepts like Structure from Motion (SfM), Multi-View Stereo (MVS), and Neural Radiance Fields (NeRF). Explored Neural Kernel Surface Reconstruction (NKSR) to refine NeRF results, tackling noise sensitivity. (Jan'24 - May'24)
- **Graduate Researcher - UIUC (Virtual Reality, Computer Vision):** Worked on a medical instrument tracking system for HoloLens2, offering medical professionals real-time mixed reality guidance. (Aug'23 - Dec'23)
- **Visual Odometry (Autonomous Vehicle):** Evaluated classical stereo vision and deep learning-based methods for visual odometry on KITTI dataset, analyzing their efficacy in calculating depth maps and tracking motion. [Link] (Aug'23 - Dec'23)
- **SafeZoneUofi (Web App):** Developed a dedicated platform for sharing and reporting of crime information and fostering a safer environment around UIUC campus area. [Link] (Aug'23 - Dec'23)

PUBLICATIONS

- **Paper:** Reef-Insight: A Framework for Reef Habitat Mapping with Clustering Methods Using Remote Sensing. Information 2023, 14, 373. [Link]
- **arXiv:** Switched auxiliary loss for robust training of transformer models for histopathological image segmentation. [Link]

LEADERSHIP

- **Head of Finance - IAESTE India LC Manipal** Manipal, India
Led a 40-member team, handling the financial responsibilities of the organization. 2020 - 2021

MISCELLANEOUS

- Teaching Assistant for the course UIUC CS444: Deep Learning for Computer Vision, Spring '24.
- Recipient of J N Tata Endowment Scholarship, demonstrating commitment to academic excellence and future impact.
- Volunteered at an NGO 'Sehar ek Nayi Udaan' - Teaching and volunteer work with children having differing abilities.
- Mentored interns and managed the Internship Training Program at Onward Assist for the January 2023 cohort.