






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, ML Algos for LLMs, 3D Vision, Adv. Data Management, 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 Engineer (Intern) May'24 - Aug'24
 - Data Curation:** Developed a multi-threaded deduplication process for Qdrant vectors, reducing redundancy by 10%.
 - Performance Optimization:** Enhanced scalability and throughput by 20% in multi-threaded applications processing millions of data points.
 - Cross-Functional Collaboration:** Worked with product and ops teams to improve the self-checkout system and streamline multi-API synchronization based on customer feedback.
- 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

- Dynamic Prompting for LLMs:** Designed a pipeline for automated prompt selection in LLMs, optimizing efficiency via dynamic strategy selection (Zero-shot, Few-shot, CoT, SC-CoT). Achieved 89% accuracy with 5x fewer tokens and 5x faster runtime than SC-CoT. [\[github\]](#) [\[report\]](#)
- Visual Odometry (Autonomous Vehicle):** Evaluated classical stereo vision and deep learning-based methods for visual odometry on the KITTI dataset, analyzing their efficacy in calculating depth maps and tracking motion. [\[github\]](#) [\[report\]](#)
- 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)

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