Saharsh Sandeep Barve

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Education

- **University of Illinois Urbana-Champagin** — Urbana-Champaign, Illinois
  Master of Computer Science — *Aug'23 - Present*
  Relevant Coursework: *Computer Vision, Cloud Computing, Applied Machine Learning, Web Programming, Software Engineering*

- **Manipal Institute of Technology** — Manipal, India
  Bachelor of Technology - 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++, JAVA, JavaScript, R
- **ML** PyTorch, OpenCV, CUDA, Deep Learning, Computer Vision
- **Web** HTML5, CSS3, React, TypeScript, Node.js
- **Database** MySQL, MongoDB, Neo4j
- **Misc** Linux, Docker, AWS, HoloLens2, Unity, MATLAB

Experience

- **Onward Assist** — Bengaluru, India
  Machine Learning Scientist (Full-time) — *Jul'22 - Jul'23*
  - **Nottingham Grading Tool**: Led the development of the Nottingham Scoring algorithm for aiding pathologists in breast cancer diagnosis.
  - **Deployment**: Successfully integrated this algorithm into our web software, facilitating its practical use by our clients. Also worked on the integration of data management platforms like TileDB and DVC into our workflows.
  - **HuBMap + HPA**: Led a team in HuBMap + HPA: Hacking the Human Body Kaggle competition to a top 8% finish.

- **Ugam Solutions Pvt. Ltd.** — Bengaluru, India
  Data Analyst (Intern) — *Jun'21 - Aug'21*
  - **Parser-based generalized web scraper**: Implemented a web scraper for data collection of e-commerce products that deduces the parser rules and data location on the web page based on given examples.
  - **Impact**: Cut down on configuration time by 60% as compared to manual web scrapers.
  - **ETL Pipeline**: Developed an Extract Transform Load pipeline, transforming and storing data for downstream teams.

Projects

- **Graduate Researcher - UIUC (Virtual Reality)**: 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)
- **Reef Insight: Clustering Framework (Machine Learning)**: Developed a custom clustering framework at the University of New South Wales, Sydney 'Transitional-AI' center for generating detailed coral reef maps from remote sensing data and conducted a qualitative comparison of clustering techniques. [Link] (Dec'21 - Jun'22)
- **Vegetation Management in Paddy Fields - Bachelor's Thesis (Computer Vision)**: Conducted a performance analysis of Unet, DeepLabv3+, and Linknet models for segmentation of unwanted crops in paddy field images. This research aimed to support farmers in crop management and precision agriculture. (Jan'22 - May'22)

Publications

- **Paper**: Reef-Insight: A Framework for Reef Habitat Mapping with Clustering Methods Using Remote Sensing. Information 2023, 14, 373. [Link]
- **Pre-Print**: 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

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