MAHESH BHOSALE

Buffalo, NY, 14226 | mbhosale@buffalo.edu | (716) 400-3049
https://bhosalems.github.io | www.linkedin.com/in/maheshsbhosale/

EDUCATION
Doctor of Philosophy, Computer Science, 06/2023 (Ongoing)
University at Buffalo, The State University of New York, Buffalo, NY, USA
- Areas of research: Cross-modal Image Registration, Person Reidentification, Action Spotting, Segmentation.
- Advisor: Dr. David Doermann
- **Google CS Research Mentorship Scholar 2023.**

Master of Science, GPA: 3.75, Computer Science, 05/2023
University at Buffalo, The State University of New York, Buffalo, NY, USA

Bachelor of Technology, GPA: 3.7, Computer Science, 05/2017
Walchand college of engine engineering, Sangli, India
- Honorable mention ACM ICPC 2015 Nationals, Amritapuri.
- Bestowed Runner-Up Best project award 2014 for Twitter Sentiment Analysis, WCE Sangli..

SKILLS
- **Languages**: Python, C++, C, SQL, Shell scripting.
- **Libraries and DBs**: PyTorch, Robotic OS, Sitk, Django, MySQL, SQLite.
- **Tools**: System-tap, crash, gdb, AWS.

WORK EXPERIENCE
Graduate Research Assistant, Research Foundation for SUNY, Buffalo, NY, USA, 05/2022 – Present
- Devising novel Multi-modal 3D medical Image registration methods. Guided by Dr. David Doermann, A2IL lab.

Software Engineer, Veritas Technologies LLC, Pune, India, 07/2017 – 06/2021
- Developed a novel algorithm for predictive execution of resource-intensive tasks. Demonstrated a paper at Veritas's annual technical conference, named IDLEBOT. Bestowed Certificate of Merit 2020.
- Developed Ransom-ware Detection tool modeling file change log in Veritas Filesystem (VxFS). presented project in Veritas's annual Hackathon, 2021.Lead effort to start ML Systems group in Org.
- Debugged in kernel and user mode on RHEL, SLES, Solaris, and AIX platforms. Worked on migrating filesystem from little-endian to big-endian system and fixed bugs in VxFS.

Engineering Intern, Veritas Technologies LLC, Pune, India, 01/2017 – 06/2017
- Reduced execution time of variants of 'ls' command by 20% using directory inode read ahead algorithm.

TEACHING EXPERIENCE
Graduate Teaching Assistant, University at Buffalo, Buffalo, NY, USA, 02/2022 – 10/2022
- CSE 702 Automated Analysis of Sporting Event Videos, CSE 4/521 Operating systems.

PUBLICATIONS
Jay Lal**, Mahesh Bhosale,** Aditya Mitkari, David Doermann**, "LineFormer: Rethinking Line Chart Data Extraction as Instance Segmentation",** International Conference on Document Analysis and Recognition 2023.

PROJECTS
- **Cross Modal Medical Image Registration (2022 Ongoing)** – Devising deep learning method for generalization of image registration for multiple data modalities such as MRI, CT.
- **Action spotting SoccerNetv4 (2023 Ongoing)** – Using transformer-based player tracking to aid detect the 17 actions such as goal, penalty, foul etc. in soccer video dataset.
- **Line-Former (2023)** – Transformer based instance segmentation for document chart data extraction achieving SOTA results across many benchmark chart datasets. Submitted the paper to ICDAR 2023.
- **ROS (2022)** – Implemented BUG2 obstacle avoidance, Camera calibration, Monocular VO, A* path planning, Bays filter for state estimation for ClearPath Husky in ROS.
- **Re-identification SoccerNetv3 (2022)** – Soccer player re-identification leveraging two-stream (RESNET + OpenPose sub-network) deep neural network using layer-wise triplet similarity loss. Employed Bilinear pooling to pool features from two streams. Beat SOTA OSNET by 2.1% in MAP and 1.8% in IOU.
- **IDLEBOT (2018-2020)** – Developed command line tool to recommend optimal time slot for execution of resource-intensive tasks for Veritas products using LSTM, FB-Prophet, and ARIMA. The proposed novel "Weighted time-slot selection algorithm" to select an optimal slot achieved a 56% reduction in exec. time.