Bhargav Chandaka

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Education

University of Illinois Urbana-Champaign *August 2023 - May 2025 (expected)*
Master of Science in Computer Science GPA: 3.65/4.0
Thesis: *Mobile Manipulation for Automated Mapping and Last-Mile Delivery*

University of Illinois Urbana-Champaign *August 2019 - December 2022*
Bachelor of Science in Mathematics & Computer Science Highest Honors, GPA: 3.85/4.0

Technical Skills

Languages/Libraries: Python, C++, Java, ReactJS, SQL, Matlab, PyTorch, OpenCV, ModernGL
Tools: Docker, Linux, Git, AWS, ROS1/2, Gazebo, Mujoco, Fusion 360 CAD, 3D printing
Hardware: Robot System Integration, Jetson, Raspberry Pi, Realsense Depth Camera, LiDAR, GPS, IMU

Publications (* Denotes equal contribution)

[1] Yuan Shen*, **Bhargav Chandaka***, Zhi-hao Lin, Albert Zhai, Hang Cui, David Forsyth, Shenlong Wang. "Sim-on-Wheels: Physical World in the Loop Simulation for Autonomous Driving".
IEEE Robotics And Automation Letters Journal (RA-L), Presented at ICRA 2024. Project Page Link

Work Experience

University of Illinois Urbana-Champaign Champaign, IL
Robotics and Computer Vision Researcher (Prof. Shenlong Wang) *January 2022-Current*
- Building a custom mobile manipulation robot platform for embodied AI tasks
- Applying transformers to predict 3D human pose and scene layout using IMU data from smartphones
- Implemented a novel way to safely evaluate self-driving systems using an augmented reality approach [1]
- Performed sensor calibration, ROS Nav2 integration, VIO, and Gazebo simulation for mobile robots

MIT Lincoln Laboratory Lexington, MA
Software Engineer (with security clearance) *Feb 2023 - July 2023*
- Applied deep learning to time series data for bioaerosol threat detection on Jetson Nano edge devices
- Automated system-level testing using ROS2/rosbags for a GPS-denied drone state estimation framework

Johnson & Johnson Medtech Redwood City, CA
Robotics Software Engineer Intern *May 2022 - December 2022*
- Designed a new feature to preserve robot arm state after a system restart for the Monarch surgical robot
- Implemented production-level C++ with system and unit tests in both simulation and hardware

Earthsense (Agtech Startup) Champaign, IL
Computer Vision Intern *January 2022 - May 2022*
- Worked with algorithms to analyze crops using video data gathered by autonomous mobile robots
- Optimized PyTorch/Tensorflow Mask-RCNN instance segmentation models for faster inference on edge devices(Raspberry Pi/Intel Compute Stick) using Onnx, TFLite, d2Go, and tensorRT

Merck Kenilworth, NJ(remote)
Devops/Machine Learning Intern *June 2021 - December 2021*
- Developed an Azure CICD pipeline to update AWS resources 40% faster with infrastructure-as-code
- Trained and deployed a custom image classification model as an API using PyTorch and AWS Sagemaker

John Deere Champaign, IL
Software Engineer Intern (Robotics R&D) *February 2020 - May 2021*
- Integrated a pure pursuit path tracking controller into an autonomous construction vehicle with Matlab/C
- Created a real-time web dashboard in Python to remotely supervise up to 6 autonomous golf mowers
- Curated a dataset of 10,000 golf course images to train a semantic segmentation model with Tensorflow

Leadership/Projects

UIUC ACM SigRobotics: Co-founded in 2024 to explore robot learning with a low-cost robot arm & more
Illinois Robotics in Space: Led a team of 12 to program an autonomous lunar rover for a NASA competition
Chess Plan (Demo Video)**:** Taught two 7-DOF Kinova robot arms to play chess autonomously in simulation