Bhargav Chandaka

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Education

University of Illinois Urbana-Champaign *August 2023 - May 2025 (expected)*
Master of Science in Computer Science (with thesis)
University of Illinois Urbana-Champaign *August 2019 - December 2022*
Bachelor of Science in Mathematics & Computer Science GPA: 3.85/4.0

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". *In submission to IEEE Robotics And Automation Letters (RA-L) 2023.* Project Page Link

Research Experience

Robotics and Vision Research Champaign, IL
Research Assistant (Professor Shenlong Wang) *January 2022-Current*

- Experimenting with **open-vocabulary mobile manipulation** using the Hello Stretch 2 indoor robot
- Applied real-time photo-realistic rendering running at **10 fps** to better evaluate **self-driving systems**
- Performing sensor calibration, **system integration**, and SLAM for an autonomous vehicle

Industry Experience

MIT Lincoln Laboratory Lexington, MA
Software Engineer *Feb 2023 - July 2023*

- Applied **deep learning** to time series data for realtime bioaerosol threat detection on edge devices
- Automated system-level testing using rosbags and **ROS2** for a drone navigation 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
- Explored optimizing 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 **document 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 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 **10,000** golf course images to train a custom Deeplab segmentation model with Tensorflow

Technical Skills

Strong Experience: Python, C++, Java, ROS1/2, Robot Systems, OpenCV, PyTorch, Linux, Git, AWS
Some Experience: Matlab/Simulink, ReactJS, SQL, Docker, ModernGL, 3D printing, Fusion 360

Select Projects

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 7DOF robot arms to play chess autonomously in a custom simulation