Ashwin Bhat

Computer Engineer

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Education

Johns Hopkins University — *Baltimore, MD*

Bachelor of Science in Computer Engineering — *May 2018*

- IEEE (Vice President of Student Chapter), Robotics Club, Association for Computing Machinery
- **Selected Coursework:** Computer Vision, Data Mining, Deep Learning, Algorithms for Sensor-Based Robotics, Data Structures, Computer System Fundamentals, FPGA Lab, Electronics Design, Intro to VLSI, Analog Circuits, Digital System Fundamentals, Renewable Energy Engineering

Skills

Languages	Python, C++, C, Typescript, Javascript, Matlab, VHDL, Java
Software Libraries	OpenCV, scikit-learn, PyTorch, numpy, pandas, React, Redux, Robot Operating System (ROS), Gazebo
Software Tools/Misc.	Git, Linux, Jira, Bitbucket, Confluence, VSCode, Qt Creator, Eclipse IDE, Jama
Electrical	PCB Design, Soldering, Circuit Analysis, FPGAs, Lab Equipment: Oscilloscope, Function Generator, Multimeter, etc.
Other Skills	Research, Technical Writing, Proposal Writing, Presentation, Teamwork, Leadership

Experience

Medly Pharmacy — *Brooklyn, NY*

Software Development Engineer — *Oct. 2020 - PRESENT*

- Full-stack development creating internal products for Medly's patient experience team (Typescript/Javascript/React/Redux).

Galen Robotics — *Baltimore, MD*

Electrical/Software Engineer - (Lead Electrical Engineer Jun. 2019-Sep. 2020) — *May 2018 - May 2021*

- Programming sensor-based error checks, logging features, and motion trajectory constraints in C++ for surgical robot.
- Designing (in Eagle), building, and testing printed circuit boards (PCBs) and RFID antennas in electrical subsystems for robot.
- Supervised team of electrical eng. interns. Implemented an iterative design process for electronics work with issue tracking.

Johns Hopkins University: Laboratory for Computational Sensing and Robotics — *Baltimore, MD*

Undergraduate Research Assistant — *Sept. 2016 - May 2018*

- Researched and implemented motion-based teleoperation for a robotic arm attached to a drone for application in aerial object manipulation using the Razer Hydra game controller, C++, and ROS.

Florida International University: School of Computing and Information Sciences — *Miami, FL*

Undergraduate Research Assistant, NSF/DoD Funded REU — *May 2017 - Aug. 2017*

- Applied advanced statistical techniques to improve hyper parameter selection in augmented terrain-based navigation by robots.
- Used selection and weighting techniques to develop an algorithm for reducing autocorrelation to create combined parameter data maps for underwater localization. This algorithm achieved greater accuracy for localization. Tested in Python and Matlab.

Projects

Augmented Webcam Experience

Computer Vision Course

- Developed a webcam experience that used finger+face tracking on real-time video to apply filters over the users face (MATLAB).
- Made filters select-able by the user depending on the number of fingers being held up in video. Filters changed in real-time.

Bluetooth Obstacle Avoiding Robot Car

Robot Sensors/Actuators Course

- Built a small robotic car that used ultrasonic sensors and an Arduino to detect and avoid obstacles autonomously.
- Integrated a Bluetooth sensor to enable wireless communication via phone to control car. Programmed in Arduino IDE.

Electronic Tracking for Earth Movers

Advanced ECE Team Project Course

- Implemented Kalman filter based noise reduction of Bluetooth sensors to reduce error in predicting location of Bluetooth beacon that would be placed on construction worker around the earth mover.
- Created a position zone (estimated position of worker) and used weighted readings to reduce hysteresis seen by user in proof-of-concept of tracking system. Prototyped in MATLAB.