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++, Matlab, VHDL, HTML & CSS
Software Libraries	OpenCV, scikit-learn, PyTorch, numpy, pandas, Robot Operating System (ROS)
Software Tools/Misc.	Git, Jira, Bitbucket, Confluence, Ubuntu, Linux command-line, 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

Galen Robotics — *Baltimore, MD*

Computer Engineer/Lead Electrical Engineer — *May 2018 - PRESENT*

- Programming sensor-based error checks, robot kinematics, frame transformations, and motion trajectory constraints in C++.
- Working in an Agile development environment for software and hardware. Writing hardware verification tests.
- Supervising team of electrical engineering interns/contractors. Designing RFID antennas and printed circuit boards (PCBs).

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 use in object manipulation.
- Implemented first person view teleoperation for aerial manipulation.
- Installed components including flight control systems, guidance, and computers on drones.

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.
- Developed software implementations of algorithm in Python and Matlab.

Projects

Augmented Webcam Experience

Computer Vision Course

- Developed a webcam experience that used finger and face tracking on real-time video to apply filters over the users face.
- 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 to detect and avoid obstacles autonomously.
- Integrated a Bluetooth to allow a smartphone to communicate over Bluetooth and control car manually.

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 in proof-of-concept of tracking system.