ASHWIN BHAT

bhat.ashwin03@gmail.com * 305-878-1762 * linkedin.com/in/abhat4 * theshwin.com

ABOUT

I recently graduated from Johns Hopkins University with my Bachelor of Science in computer engineering. I also minored in robotics, computer science, and applied math/statistics. I am primarily interested in opportunities in engineering to gain experience with real-world applications. I enjoy working with robots and computers and conducting research. From my previous work, I have learned how to tackle challenging problems and find solutions to them.

EDUCATION

Johns Hopkins University
August 2014 – May 2018

Whiting School of Engineering
Major: Computer Engineering; Minors: Robotics, Applied Math and Statistics, and Computer Science
Dean's List

- Robotics Club, Institute of Electrical & Electronics Engineers (Vice President), Association for Computing Machinery

John A. Ferguson Senior High School
August 2010 – June 2014

International Baccalaureate Diploma Program

- Top 1% of class, Summa Cum Laude, earned the IB Diploma and AP Scholar with Distinction

SKILLS

Programming Languages	C, C++, Python, Matlab, VHDL, Java, HTML & CSS
Programming Skills	Robot OS (ROS), OpenCV, PyTorch, scikit-learn, Machine Learning, Linux, Software Dev Tools: Mercurial, Git, Jira
Engineering Skills	PCB Design (Eagle), Arduino (Uno, Due, etc.), LTSpice, Electronics Lab equipment, Soldering, RFID
Selected Coursework	Computer Vision, FPGA Lab, Robot Sensors/Actuators, ML: Deep Learning, Algorithms for Robotics, Electronics/Circuits
Other Skills	Research (scientific/engineering), Technical and Creative writing/Proposal writing, Presentation, Teamwork, Carpentry

EXPERIENCE

Galen Robotics
September 2018 – present (Comp Eng.)
May 2018 – August 2018 (Electrical Intern)

Computer Engineer (Previously: Electrical Engineering Intern)

- Designing printed circuit boards/working on internal electronics and RFID hardware.
- Selecting components and leading electrical subsystem design. Leading team of electrical engineering interns/contractors. Creating verification tests for electrical subsystems of robot.
- PID tuning for smooth control of robot platform. Programming sensor-based error checks, robot kinematics, frame transformations, virtual fixtures, and motion trajectory features.

JHU Laboratory for Computational Sensing and Robotics: Autonomous Systems, Control, and Optimization Lab
September 2016 – May 2018

Undergraduate Research Assistant

- Installed components including flight control systems, guidance, and computers on drones.
- 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.

Florida International University: School of Computing and Information Science
May 2017 – August 2017

Undergraduate Research Assistant at NSF/DoD Funded Research Experience for Undergraduates (REU)

- Applied advanced statistical techniques to improve hyper parameter selection for use in augmented terrain-based navigation by robots.
- Developed a method for assigning weights to water parameters while reducing correlation.
- Used these selection and weighting techniques to develop an algorithm for reducing autocorrelation to create combined parameter data maps for underwater localization.

PROJECTS - more details and links to repositories/papers on my website (theshwin.com)

Computer Vision Projects
Augmented Webcam, Face matching

1) Developed an augmented webcam experience using finger and face detection/tracking in real-time.
2) Implemented Siamese networks to recognize facial similarity between pairs of faces using PyTorch.

Robot Sensors/Actuators
Bluetooth-controlled, obstacle-avoiding car

Built a small robotic car that used ultrasonic sensors to detect and avoid obstacles. Implemented a bluetooth module and programmed bluetooth control of the car to have autonomous and manual modes.

FPGA Synthesis Lab
Logic Analyzer/Frequency Meter

Implemented an FPGA-based logic analyzer that could be used as a USB oscilloscope/picoscope. Implemented a frequency meter that counted the frequency of inputted signals.