NIKHIL BHAT

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Education

NORTHEASTERN UNIVERSITY BACHELOR OF SCIENCE IN COMPUTER ENGINEERING & COMPUTER SCIENCE **MAY 2021**

GPA: 3.98/4.00 Honors Program

Activities: TA for Discrete Structures, Founding Member of Northeastern Robotics & Automation Society, Mentor for FTC Robotics Team, Teacher at MIT Splash, Honors Living Learning Assistant for Northeastern Honors Program, Build Studio Engineer at Northeastern Generate

Coursework: Computer Vision, Algorithms and Data Structures, Object Oriented Design, Embedded Design: Enabling Robotics

Work Experience

SOFTWARE ENGINEERING CO-OP GREENSIGHT AGRONOMICS **JANUARY 2019 – JULY 2019**

Python, OpenCV, ROS, C++

- Developed an autonomous drone navigation system using OpenCV which won the company $30,000 in the Verizon 5G Robotics Challenge
- Designed a self-correcting algorithm for heliostat motion, by using OpenCV coupled with a PID controller to account for GPS errors
- Implemented SLAM navigation algorithms using a combination of 2D LIDAR and depth cameras for an autonomous ground robot
- Created and deployed a ROS network of 100 interconnected devices to track the sun and generate solar power

DATA ANALYST INTERN BARNES AEROSPACE **MAY 2018 – AUGUST 2018**

Python, NumPy, Pandas, VBA

- Reduced turbine center frame inspection times by 30% by developing a Python program to implement statistical process control
- Designed a heavily depended-on error reporting software using PyQt5 and MySQL for supervisors to monitor the manufacturing plant
- Developed an algorithm in Python to categorize part defects based on problem description fields utilizing regular expression matching
- Built a VBA application to dynamically schedule manufacturing operations, accounting for variable lead times and delivery delays

UNDERGRADUATE RESEARCH ASSISTANT NORTHEASTERN UNIVERSITY FIELD ROBOTICS LAB **OCTOBER 2017 – APRIL 2018**

C++, ROS, Python, ViSP

- Programmed a real time kinematic GPS driver using C++, and integrated it into the autonomous car ROS environment
- Implemented an image labeling platform using Python to label underwater fish datasets
- Furthered development in drone navigation techniques utilizing AprilTag image detection with ViSP and OpenCV

ROBOTICS AMBASSADOR CONNECTICUT SCIENCE CENTER **JUNE 2014 – AUGUST 2015**

Arduino, C++

- Increased accessibility for disabled patrons of the Hartford Farmer's Market by manufacturing an autonomous shopping robot utilizing Arduinos, GPS Shields and IR sensors to follow the customer
- Designed and built a robotics exhibit involving driver-controlled soccer robots playing against an Arduino-based autonomous goalie

Leadership

NORTHEASTERN IEEE **AUGUST 2017 – PRESENT**

VICE PRESIDENT

- Facilitated and ran club meetings for the largest professional engineering society at Northeastern

CAREER SUMMIT CHAIR

- Organized an ECE career fair attended by over 100 ECE students by reaching out to companies across the Greater Boston area

REACH COLLEGE CONSULTING **MAY 2018 – PRESENT**

CEO & CO-FOUNDER

- Founded a company to help students with the entire college application process, from selecting schools to interview preparation
- Improved the SAT scores of 100% of clients, and helped 2 clients achieve perfect scores

Skills

LANGUAGES – Python, C++, Java, MATLAB

TECHNOLOGIES – OpenCV, ROS, Arduino, Git

Personal Projects

FANCILY
A machine-learning iOS app to recommend daily outfits from a user's closet based on individual stylistic preferences

DON'T TOUCH MY OJ
A Raspberry Pi based vision system which sends a text alert when other people take your food from the fridge

SESQUIPEDALIAN
A Words with Friends solver, which reads the current game board using OpenCV based OCR and produces the highest scoring move

ALL OF THE LIGHTS
A Raspberry Pi lightshow, which pulsates multicolored LEDs based on the mood and BPM of the current song by querying the Spotify API

ENDLESS TRIVIA
A multiplayer Python game which uses the Wikipedia API to generate an endless amount of random trivia questions of varying difficulties