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, 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

INTEL SOFTWARE ENGINEERING CO-OP **JANUARY 2020 – JUNE 2020**

Python, OpenCV, C++

- Implemented computer vision and data processing algorithms for 3D Athlete Tracking at the Tokyo 2021 Olympic Games
- Designed an end-to-end static camera calibration application using OpenCV and Tkinter resulting in under 5cm of error
- Decreased runtime of the biomechanical analysis module by 20x through algorithm optimizations and data processing adjustments
- Implemented a modified inverse kinematics algorithm on the biomechanical analysis module, reducing start of race error by 70%
- Deployed a modular unit-testing framework for verifying camera calibration accuracy, and integrated it into the team's CI/CD pipeline

GREENSIGHT SOFTWARE ENGINEERING CO-OP **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 LIDAR-based SLAM navigation algorithms for an autonomous ground robot using ROS and Google Cartographer
- Created and deployed a ROS network of 100 interconnected devices to track the sun and generate solar power

BARNES AEROSPACE DATA ANALYST INTERN **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

NORTHEASTERN UNIVERSITY FIELD ROBOTICS LAB UNDERGRADUATE RESEARCH ASSISTANT **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

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 – AUGUST 2019**

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 that sends a text alert when other people take your food from the fridge

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

EKONDO
A React web app that uses Google Cloud Vision and the EBay API to automatically sell products using just a single image.

ENDLESS TRIVIA
A multiplayer Python game that uses the Wikipedia API to infinitely generate random trivia questions of varying difficulties