

NIKHIL BHAT

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Education

NORTHEASTERN UNIVERSITY BACHELOR OF SCIENCE IN COMPUTER ENGINEERING & COMPUTER SCIENCE

MAY 2021

GPA: 3.99/4.00 Major GPA: 4.00/4.00 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, Project Lead at Northeastern Generate

Coursework: Computer Vision, Practical Neural Networks, Robotic Science and Systems, Engineering Product Design and Prototyping

Work Experience

AMAZON SOFTWARE ENGINEERING INTERN

JUNE 2020 – AUGUST 2020

Java, AWS (S3, Lambda, DynamoDB)

- ❖ Saved over \$100,000 a week by expanding a native AWS service used to identify software products being sold at a loss
- ❖ Developed an automated service running on AWS Lambdas to update business owners on recently suspended products

INTEL SOFTWARE ENGINEERING CO-OP

JANUARY 2020 – JUNE 2020

Python, OpenCV, C++

- ❖ Developed computer vision and data processing algorithms for 3D Athlete Tracking at the Tokyo 2021 Olympic Games
- ❖ Implemented a modified IK algorithm on the biomechanical analysis module, reducing the initial runner velocity calculation error by 70%
- ❖ Designed an end-to-end static camera calibration application using OpenCV and Tkinter resulting in under 5cm of reprojection error
- ❖ Decreased runtime of the biomechanical analysis module by 20x through algorithm optimizations and data processing adjustments
- ❖ 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 an integral 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
- ❖ Furthered development in drone navigation techniques utilizing AprilTag image detection with ViSP and OpenCV

Leadership

NORTHEASTERN IEEE VICE PRESIDENT

AUGUST 2017 – PRESENT

- ❖ Facilitated and ran club meetings for the largest professional engineering society at Northeastern
- ❖ Organized an ECE career fair attended by over 100 ECE students by reaching out to companies across the Greater Boston area

REACH COLLEGE CONSULTING CEO & CO-FOUNDER

MAY 2018 – AUGUST 2019

- ❖ 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, AWS, Google Cloud, Tensorflow, PyTorch

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 computer 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 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