Belal Said

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Education:

Rutgers University *2015 - 2019*

- **Pursuing:** B.E. in Mechanical Engineering from the School of Engineering Honors Academy and a B.A. from the School of Arts and Sciences in Computer Science.
- **GPA:** 3.85
- **Relevant Coursework:** Data Structures and Algorithms, Computer Architecture, Discrete Structures, Algorithm Design, Calculus 1/2/3/4 and Engineering Calculus, Dynamics, Computer Modeling, Mechanics of Materials

Skills

- **Spoken Languages:** English and Arabic
- **Technical Skills:** C#, C/C++, Java, Python, Matlab, PHP, HTML, Javascript, Solidworks/3D Modeling, AJAX, Git, Visual Studio, Eclipse

Professional Experience

Quadcopter Communication - **Programmer** under *Professor Jingang Yi*

- Worked with Engineering graduate student to build and design quadcopters. Programmed quadcopter in C++ and PX4 Autopilot to communicate with room sensors. The aim of the project is to be able to coordinate between quadcopters and rooms sensors to ease indoor navigation.

SteerSuite - **Programmer** under *Professor Mubassir Kappadia*

- Coordinated with a team of PhD students to optimize SteerSuite, a crowd simulator written in C++. I also developed an algorithm that outputs the optimal evacuation plan for a floor in a building and built a C# plugin for Autodesk Revit to incorporate SteerSuite and make it user friendly. The aim for the project is to create a standardised rating for the safety of a building and help architects design efficient floor plans.

AllState Insurance - **Programmer/Data Analyst**

- My job was to extract customer data and build an algorithm in python that determine which customers are more likely to buy AllState insurance. I used a system that would assign a score to potential customers based on their likelihood to switch insurance and sorted them based on the score. The algorithm then would optimize with feedback on these customers.

Extracurricular Activities

IEEE - *PacBot Team Captain*

- PacBot for Harvard University PacBot Competition - built an algorithm for the bot in python to navigate a maze and avoid the ghosts. The robot was designed from scratch with the body 3D printed and a custom PCB circuit that's controlled by Raspberry Pi Zero.

ASME - *Robotics*

- Leader of programming team. Designed the main software that runs on a Raspberry Pi in python. The robot had to perform complicated tasks such as climbing stairs, hitting a golf ball, and launching a tennis ball.

International Sanitation Organization - *Intern*

- Helped fundraise for ISO, a legal 501c3 certified non-governmental organization, which has collaborated with UN recognized organizations to bring fresh water to thousands of people in Africa. More information can be found here: www.internationalsanitation.org.

Rutgers Democrats - *Volunteer*

- Volunteered to help run campaigns for local politicians

Personal Projects

C# Raytracer

- Built a raytracer from scratch that renders on a web server based on the book *Physically Based Rendering* by Matt Pharr. The code was built on abstract classes to allow high customizability and uses a custom built Math library. The project was built to test new raytracing technique such photon mapping and multithreading techniques. Invloving CPU and GPU.

Dynamic-Matlab Slot Car Simulation

- I built a simulation of a slot car moving in a track. The track path is made by a matlab function using cubic splint and paramtetic spline. The track physics is simulated in javascript for an interactive application.

Scrap Music Box

- Built a programmable mechanical music box using scrap and rubber bands. The cylinder was built by cutting mahogany using a circular saw and gluing them to form a 2 inch long cylinder. The rubber bands are attached to a governor that controls that speed of the music box using air resistance. The notes are built from rake teeth that I cut off and filed down to their specific notes.