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:

SteerSuite - Programmer under *Professor Mubassir Kappadia* *7/2016 - 9/2016*

- 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.

Quadcopter Communication - Programmer under *Professor Jingang Yi* *10/2015 - 3/2016*

- 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.

AllState Insurance - Programmer/Data Analyst *6/2014 - 9/2015*

- 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 3" 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 a rake's teeth that I cut off and filed down to their specific notes.