Belal Said

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Education:

Rutgers University   *9/2015 - 5/2019*
- **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, Mechanical Engineering Computational Analysis and Design, 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, Unity3D, Eclipse, AWS

Professional Experience:

SteerSuite - Programmer under *Professor Mubassir Kappadia* **- New Brunswick, NJ**   *7/2016 - 9/2016*
- Coordinated with a team of PhD students to optimize SteerSuite, a crowd simulator written in C++, and developed an algorithm that outputs the optimal evacuation plan for a floor in a building
- Designed 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* **- New Brunswick, NJ**   *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 - Edison, NJ   *6/2014 - 9/2015*
- Wrote a software to extract customer data and designed an algorithm in python that determine which customers are more likely to buy AllState insurance.
- The algorithm 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 from these customers

Extracurricular Activities:

IEEE - *PacBot Team Captain*   *10/2015 - present*
- PacBot for Harvard University PacBot Competition - created 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 Team Captain*   *9/2016 - present*
- Leader of programming team. Designed a robot that had to climb stairs, hit a golf ball, and launch a tennis ball. The robot was modeled on Solidworks and builtusing Rutgers' machine shop

International Sanitation Organization - *Intern*   *7/2014 - present*
- 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*   *10/2015 - present*
- Volunteered to help run campaigns for local politicians

Personal Projects:

C# Raytracer
- Developed a raytracer from scratch 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 goal of the project was to test new raytracing technique such as photon mapping and multithreading techniques involving CPU and GPU

Dynamic-Matlab Slot Car Simulation
- Built a simulation of a slot car moving in a track. The track path is made by a matlab function using cubic splint and parametric spline. The track physics is simulated in javascript for an interactive application

Scrap Music Box
- Built a mechanically programmable music box using scrap wood 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