

# 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

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## 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

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## 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

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## 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 built using 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](http://www.internationalsanitation.org)

### Rutgers Democrats - Volunteer

10/2015 - present

- Volunteered to help run campaigns for local politicians

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## 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