

# Belal M. K. Said



belalmksaid



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<http://belalsaid.com>



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## Education

### Rutgers University-New Brunswick

09/2015 - 05/2019

— B.E. in Mechanical Engineering & B.S. in Computer Science  
GPA: 3.83/4.00

**Relevant Coursework:** Data Structures, Computer Architecture, Discrete Structures, Probability Theory, Artificial Intelligence, Dynamics, Circuits

## Skills

**Advanced:** C/C++, Java, Javascript, C#, Matlab

**Proficient:** PHP, Python, HTML, CSS, ABAP

**Technologies:** OpenCV, Unity, Node.js, AWS, React, SAP

**Other:** Solidworks, Simulink, ANSYS

## Experience

### Colgate-Palmolive - Software Engineering Intern - Piscataway, NJ

06/2017 - Present

- Develop APIs for standardized data access using a Node.js server to pull data from SAP's HANA and make it user friendly
- Built the code base for the Colgate-Palmolive Human Genome Project by implementing HANA tables and connecting them to a server
- Set up the server and database for the Learning Center, revamped the UI, and launched the product for company employees

### AllState Insurance - Data Analysis Intern - Edison, NJ

06/2014 - 09/2014

- Increased customer service productivity by 25% using an algorithm that determines which customers are likely to switch insurance
- The algorithm would use a custom score to sort potential customers and optimize with feedback from customer service

## Research

### SteerSuite under Professor Mubbasis Kapadia - Research Assistant - New Brunswick, NJ

06/2016 - 08/2016

- Reduced simulation time by 17% by implementing bounding boxes and Dynamic Bounding Volume Hierarchies
- Developed an algorithm that uses directed graphs to model human behavior in rooms
- Designed a C# plugin for Autodesk Revit to incorporate SteerSuite and make it user friendly

### Mechatronics Lab under Professor Jingang Yi - Research Assistant - New Brunswick, NJ

10/2015 - 03/2016

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

## Extracurriculars

### IEEE - PacBot Team Captain

10/2015 - Present

[github.com/belalmksaid/PacBotCode](https://github.com/belalmksaid/PacBotCode)

- Created an algorithm for the bot to navigate a maze and avoid the ghosts, optimized to run on teensyduino. The robot was designed using a custom PCB circuit and a 3D printed body
- **Won first place at Harvard PacBot Competition 2017**

### International Sanitation Organization

07/2013 - Present

[internationalsanitation.org](http://internationalsanitation.org)

- Helped found and 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

## Projects

### Internet of Things

01/2014 - Present

[github.com/belalmksaid/loi](https://github.com/belalmksaid/loi)

- Connected home electronic devices such as lamps, a fridge, a microwave, and a minivan to the internet through electrical IMPs and mapped it to a Node.js server
- **Won Internet of Things award from Microsoft and Intel**

### Waec

06/2016 - 09/2016

[github.com/belalmksaid/waec](https://github.com/belalmksaid/waec)

- Built the codebase for air highways in C++ and PX4 Autopilot using 3D spline parameterization
- Designed the drone autonomous system using a GPS-based PID system

### C# Raytracer

07/2012 - 08/2014

[github.com/belalmksaid/Disque-Raytracer](https://github.com/belalmksaid/Disque-Raytracer)

- Developed a raytracer from scratch using a custom built Math library and Alea GPU
- Applied parallel computing techniques such as photon mapping and distributed computing, cutting render time by at least 95%

### TrackrBot

07/2014 - 08/2014

[github.com/ericson/TrackrBot](https://github.com/ericson/TrackrBot)

- Wrote a platform that lets users create custom APIs for dynamic data on a website of the user's choice
- **Won first place at CodeDay NY 2014**