

# Belal M. K. Said

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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

Major GPA: 3.91/4.00

**Relevant Coursework:** Data Structures, Computer

Architecture, Software Methodology, Discrete Structures,

Probability Theory, Artificial Intelligence, Circuits

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## Technical Skills

- C/C++, Java, Python, C#, Matlab, Javascript, PHP
- HTML/ CSS, SQL, Node.js, MySQL, JQuery, AJAX

- Git, Visual Studio, Eclipse, TesnorFlow, OpenCV
- Linux, Windows, Android

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## Experience

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

06/2017 - Present

- Built and designed OMNIPAL in Node.js, an all-knowing web application that uses natural language to expose HANA
- Extended OMNIPAL using TensorFlow to predict order failures, create status reports, and produce prediction models
- Helped extend Event Management by designing an SQL query to match data from vendors and shipping centers

### PRACSYS under Professor Kostas Bekris - Research Assistant - New Brunswick, NJ

06/2017 - Present

- Designed a path planner for Baxter's arm, a multi-jointed robotic arm with seven degrees of freedom, using Ceres to solve the constraint system and then using A\* to find the optimal action-path

### SteerSuite under Professor Mubbasir 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 Bayesian networks to model human behavior in rooms
- Designed and coded 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 graduate Engineering student to build and design quadcopters small enough to maneuver indoors
- Programmed quadcopter in C++ and PX4 Autopilot to communicate with room sensors for navigation

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

06/2014 - 09/2014

- Increased productivity by 25% using decision trees to determine which customers are likely to switch
- The algorithm uses a custom score to sort potential customers and optimize with feedback from customer service

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## Projects

### Speed Prediction - [github.com/belalmksaid/speed\\_prediction](https://github.com/belalmksaid/speed_prediction)

07/2017 - Present

- Predicted instantaneous speed of a moving car from a live dashcam video within  $\pm 1$  mile accuracy by using Farneback optical flow, a deep learning network, and exponential moving average

### Internet of Things - [github.com/belalmksaid/loi](https://github.com/belalmksaid/loi)

01/2014 - 03/2017

- Connected home electronic devices such as lamps, a fridge, a microwave, and a minivan to the internet using electrical IMPs and mapped them to a Node.js server
- Won Internet of Things award from Microsoft and Intel at PennApps 2014

### TrackerAPI - [github.com/belalmksaid/TrackerAPI](https://github.com/belalmksaid/TrackerAPI)

07/2014 - 08/2014

- 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

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## Extracurriculars

### IEEE - PacBot Team Captain - [github.com/belalmksaid/PacBotCode](https://github.com/belalmksaid/PacBotCode)

10/2015 - Present

- 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 - [internationalsanitation.org](https://internationalsanitation.org)

07/2013 - Present

- 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 Ghana