

# Belal M. K. Said

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## Education

### Rutgers University-New Brunswick

09/2015 - 05/2019

Bachelors of Science in Computer Science

Dean's List (every semester)

GPA: 3.83/4.00

**Relevant Coursework:** Data Structures, Computer

Architecture, Discrete Structures, Probability Theory,

Artificial Intelligence, Circuits

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## Technical Skills

- C/C++, Java, Javascript, Python, C#, Matlab, PHP
- HTML/ CSS, Node.js, MySQL, JQuery, MongoDB
- 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, an all-knowing web application that uses natural language to expose multiple data APIs
- Built a RESTful API in Node.js to standardize voice command matching using MonogoDB as the NoSQL database
- Designed a library from scratch in javascript that generates simple machine learning models for OMNIPAL

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

06/2017 - Present

- Designed a path planner in C++ for Baxter's arm, a multi-jointed robotic arm with seven degrees of freedom, using Ceres Solver 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

- Coordinated with a team of PhD students to optimize SteerSuite, a crowd simulator written in C++
- Reduced simulation time by 17% by implementing bounding boxes and Dynamic Bounding Volume Hierarchies
- Designed and coded a C# plugin to incorporate SteerSuite into Autodesk Revit and make it user friendly

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

06/2014 - 09/2014

- Designed an algorithm in python that uses 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 using Matlab

### PacmanAI Lab - [github.com/belalmksaid/PacmanAILab](https://github.com/belalmksaid/PacmanAILab)

07/2017 - Present

- Implemented genetic algorithm with simple neural networks to teach an AI how to play pacman in javascript
- Built a simple framework from scratch to emulate multithreaded applications to avoid freezing the browser

### 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 Intel at PennApps 2014

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

07/2014 - 08/2014

- Wrote a platform in Node.js 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