

# Raphael Gontijo Lopes

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## EDUCATION

**Georgia Institute of Technology** - Computer Science

Aug 2014 - May 2018 (expected)

- GPA: 3.95 (3.93 CS)

**Stanford's Coursera** - Machine Learning MOOC by Andrew Ng

Feb 2015 - May 2015

## SKILLS

- **Machine Learning**, Artificial Intelligence, Algorithms, Web
- **Python**, Java, Dart, Swift, JavaScript, C
- **TensorFlow**, scikit-learn, NLTK, pybrain, jQuery, Angular, mongoDB

## WORK EXPERIENCE

**Google** - *Software Engineer Intern* - Google Adwords

May 2016 - Aug 2016

- Created tools for advertisers to visualize statistics about their ads in Adwords at a glance
- Developed protobuf translators in the Java backend; graphing and UI in the Dart/Angular frontend

**Google** - *Engineering Practicum Intern* - Google Analytics

May 2015 - Aug 2015

- Automated the bookkeeping, and visualization of test coverage information of Google Analytics' jobs
- Used tools such as Bigtable, Proto buffers, Borgcron, Dremel, PyUnit, Google Message Routing Protocols

**ADAM Lab** - *Undergraduate Research Assistant*

Sep 2015 - Nov 2015

- Prototyped a web tool for collecting data from YouTube videos of test users' level of attention during play
- Created and managed Node.js/mongoDB backend for the Drawing Apprentice research project

## PROJECTS

**Buzzmobile**

[github.com/gtagency/buzzmobile](https://github.com/gtagency/buzzmobile)

- Autonomous vehicle used as a parade float
- Developed reactive control system in C++ and Python using ROS and OpenCV

**Monte Carlo Tetris Bot**

[github.com/gtagency/tetris-python](https://github.com/gtagency/tetris-python)

- Competitive tetris-playing bot for online competition, using Monte Carlo Tree Search to make decisions.
- Implemented MCTS, with 'relaxed' evaluation functions, as fallback alternatives to vanilla MCTS.

**140 M.D.** (MHacks Refactor)

[github.com/iRapha/140 MD](https://github.com/iRapha/140_MD)

- Probabilistic sleep schedule prediction, based on a user's tweet history
- Calculated Poisson Distributions using timestamp data from twitter, and approximated sleep/wake times
- Used D3.js + flask to visualize the results

**Pretty Graphs**

[github.com/gtagency/graph-reduction](https://github.com/gtagency/graph-reduction)

- Python module that finds prettiest configuration of a graph using Simulated Annealing and SGD
- Implemented the Simulated Annealing and Gradient Descent algorithms, and heuristics for cost function
- Designed and created a wrapper for the algorithm for developer ease of use

**Conn Wars** (Ludum Dare 30)

[github.com/GTludumDare/ludum-dare-30](https://github.com/GTludumDare/ludum-dare-30)

- Online minimalistic strategy game about conquering the galaxy
- Created majority of game logic, as well as interface for the game A.I.
- Designed the game's UI and created all visual graphics

**Text Simplifier** (MHacks V)

[github.com/RobertoTakesMHacks/TextSimplifier](https://github.com/RobertoTakesMHacks/TextSimplifier)

- Chrome extension for simplifying the text of the current web page
- Created the semantic trees from raw text, using python's nltk NLP library
- Designed the logic of removing branches from the semantic tree to maximize text understanding

## LEADERSHIP/ACTIVITIES

**The Agency** (AI research club) - Vice President / Internal Operations Officer

Dec 2015 - Present

**Undergraduate Council** - Vice President

May 2016 - Present

**HackGT** - Operations Organizer

Oct 2015 - Present

**Georgia Tech Sailing Club**

Feb 2015 - Present