

# Raphael Gontijo Lopes

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## EDUCATION

**Georgia Institute of Technology** - Computer Science - GPA: 3.96 (3.93 CS) Aug 2014 - May 2018 (expected)  
*Stanford Coursera* - Machine Learning MOOC by Andrew Ng Feb 2015 - May 2015  
*Stanford CS231n* - Convolutional Networks for Visual Recognition by Fei-Fei Li Dec 2016 - Jan 2017

## SKILLS

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

## RESEARCH

**Data-Free Knowledge Distillation of Deep Neural Networks** Paper submitted to NIPS 2017  
**Neural Network Knowledge Distillation w/ No Training Data** Poster presented at ML@GT Symposium 2017  
**Towards End-to-End Pose Estimation and Transfer** Oral presentation at GT Spring Symposium 2017

## WORK EXPERIENCE

**Microsoft** - *Software Engineer Intern* - Azure Service Fabric May 2017 - Aug 2017

- Implemented distributed Machine Learning systems using Service Fabric
- Designed and created developer tools to make this task easy.

**GT Ubicomp Group** - *Undergraduate Research Assistant* Aug 2016 - Present

- Developed Deep Learning models in TensorFlow for unsupervised pattern recognition of Sign Language.
- Conducted self-led research on data-free neural network model compression using knowledge distillation

**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

**Google** - *Engineering Practicum Intern* - Google Analytics May 2015 - Aug 2015

- Automated the bookkeeping, and visualization of test coverage information of Google Analytics' jobs

## PROJECTS

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

- Autonomous vehicle used as a parade float, built with ROS and python.
- Led team of 10+ in developing reactive control architecture, and an automated simulation framework.

**InTube** (TreeHacks 2017) [github.com/iRapha/search\\_within\\_videos](https://github.com/iRapha/search_within_videos)

- A web app for searching within a youtube video, based on its visual and audio content.
- Created pipeline for efficiently retrieving youtube thumbnails and tagging them using deep ML models.

**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

**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, interface for the game A.I., as well as all visual graphics.

## LEADERSHIP / ACTIVITIES

**The Agency** (AI research club) - President / Internal Operations / External Affairs Officer Dec 2015 - Present  
**Undergraduate Council** - Vice President May 2016 - Present  
**HackGT** - Operations Organizer Oct 2015 - Present  
**Georgia Tech Sailing Club** Feb 2015 - Present  
**Home Depot Deep Learning Competition** - 2nd place, the only undergraduate team in top 5. Apr 2017