# 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 - Ian 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 Neural Network Knowledge Distillation w/ No Training Data Towards End-to-End Pose Estimation and Transfer Paper submitted to NIPS 2017 Poster presented at ML@GT Symposium 2017 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

- 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

- 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

- 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

- 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

- 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

<b>The Agency</b> (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
<b>Home Depot Deep Learning Competition</b> - 2nd place, the only undergraduate team in top 5.	Apr 2017