

# Ivan Tadeu Ferreira Antunes Filho

253 Commonwealth Av.

Boston, MA 02116

(857) 600 1074

ivanaf@mit.edu

github.com/itf

B.S. Computer Science and Electrical Engineering & Mathematics, MIT, 2017

Master of Engineering in Computer Science, MIT, anticipated May 2019

## Experience

- Fall 2018 **M.Eng, Cybersecurity Lab - Csail - MIT**, Cambridge, MA.  
Making the memory management of Tock safer, by stopping unsafe **Rust** functions from having unintended effects.
- Fall 2017 - **Teaching Assistant**, 6.006 Introduction to Algorithms - MIT, Cambridge, MA.  
Fall 2018 Really enjoying teaching and helping the students. Received a 6.5/7 evaluation in 2017.
- Summer 2017 **Performance Researcher**, QUANTLAB, Boston, MA.  
Helped design and improve a Domain Specific Language used by Quantlab's trading system. Details protected by NDA.
- Summer 2016 **Software Engineering Intern – Neko Team**, FACEBOOK, Seattle, Wa.  
Improved organic post logging in mobile using **HackLang** and **PHP** and created pipelines and an API endpoint to analyze publishers Return On Ad Spend using **Hive**, **Presto** and **Mysql**.
- Summer 2015 **Software Engineering Intern – Search Quality Team**, INDEED, Austin, TX.  
Developed visualization tools for user data using **Javascript** and **HTML 5**. Created a webapp to help identify user metadata in Indeed's Visualization tools. Created a small library in **Java** for converting logged data in Hadoop. Changed the data storage format used for ads personalization. Added filters to Indeed's AB testing interface
- Summer 2014 **Software Engineering Intern – Search Quality Team**, INDEED, Austin, TX.  
Made the generation of snippets on the main company website 80% faster, recognizing non-obvious bottlenecks with the use of profilers. Rewrote performance critical job indexing code using **Intel Intrinsic**s, **C** and **C++**
- Fall 2013 **Undergraduate Researcher**, CAMERA CULTURE, MEDIA LAB, MIT, Cambridge, MA.  
Frequency Based Spatial Encoding for Single Sensor Sonar and Medical Ultrasound. Available on [tinyurl.com/see-corners](http://tinyurl.com/see-corners)

## Awards

- 2009-2013 **Science Olympiads**, Self taught Physics, Astronomy, Chemistry, Linguistics, Biology, Math, Pascal and C++ with 29 national awards and 11 international awards.
- International Physics Olympiad Gold Medal (2012, Estonia)
  - International Astronomy and Astrophysics Olympiad Silver Medal(2012, Brazil)
  - International Linguistics Olympiad Silver Medal (2012, Slovenia)
  - Iberoamerican Biology Olympiad Silver Medal (2012, Portugal)
  - International Junior Science Olympiad Gold Medal (2010, Nigeria)
  - Brazilian Informatics Olympiad Silver Medal (2011, Brazil)
- Jan 2015 **MASLAB - Cocoabot**, 1<sup>st</sup> place team at the MIT Autonomous robots competition.  
We built Cocoabot, a robot that finds and stacks cubes by color. Cocoabot had around **10.000 lines of C++11** code, split in 10 threads in an Intel Edison. I was responsible for integrating the modules, designing the state machine and the motor-controllers code, debugging the code with **GDB** and finding memory leaks. Documented on [tinyurl.com/cocoabot](http://tinyurl.com/cocoabot).

## Projects

- Fall 2018 **Static website generator; webcam scanner; export org with external files**, *Org mode projects*.  
Using **Elisp** and org mode, made a static website generator. With **Elisp**, **Bash** and **Python** a script to scan pages.
- Summer 2016 **Static typed website**, *For parent's business in Brazil*.  
Created a single page static website using Hugo (**Go**), **HTML**, **CSS**, **Js**. Available on [github.com/itf/lazuli](http://github.com/itf/lazuli)
- Jan 2016 **Iron Curtain 2**, *30x60 LED Panel*.  
Organized the construction of a 30x60 pixels (2m by 1m) LED Panel in 4E, MIT, and wrote functional programming code in **Python** to control and combine the patterns displayed by the panel, on [github.com/itf/iron-curtain-2](http://github.com/itf/iron-curtain-2)
- 2015-2016 **4E Hall projects**, *Bemix(centralized music system); Hall Wiki, Printers and Servers. Project Fund*.  
Added Youtube streaming on Bemix. Maintained the 4e wiki and printers and servers. Organized hall's "project fund".
- 2010-2014 **OlimpiadasCientificas.com**.  
First Brazilian website to help high school students and teachers to participate in Science Olympiads. ~500 visits per day, made with wordpress.org. It was cited by the largest Brazilian newspaper in 2012, [tinyurl.com/ocientificas](http://tinyurl.com/ocientificas).

## Academics and Various

- Courses** ○ Comp. Systems Security ○ Comp. and Network Security ○ OS Eng. ○ Comp. Networks ○ Machine Learning  
4.5 GPA ○ Design and Analysis of Algorithms ○ Advanced Algorithms ○ Power Electronics Lab ○ Robotics: Science and Systems 1 ○ Theory of Computation ○ Algebra I-II ○ Principles of Discrete Applied Math ○ Real Analysis  
○ Signals, Systems, and Inference ○ Discrete-Time Signal Processing ○ Information Acquisition and Proces.

- Languages** ○ Portuguese ○ English