

# Jonathan Prieto-Cubides

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**Date of Birth:** 1991-04-18

**Gender:** Male

**Citizenship:** Colombia

**Current Profession:** Research Assistant

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I am a math student finishing the last year of the Master program in Applied Mathematics at EAFIT University. I am writing my thesis under advisory of Prof. Andrés Sicard-Ramírez in the integration between the automatic theorem prover Metis and the proof-assistant Agda. Our long-term goal is to develop a SledgeHammer like-tool for Agda.

I mainly interested in mathematics for computer science, topics in discrete mathematics, algorithms, functional programming and foundation of mathematics. Recently, I found myself reading about intuitionistic logic, type theory, and category theory.

I had some experience doing research and working with people of different backgrounds and from distinct disciplines. I always enjoy sharing my work with the team and build amazing things!

## Research Experience

### Young Research Assistant

2016-present

EAFIT University. Logic and Computation Research Group. Medellín, Colombia

- Logic, Type Theory, Agda, Functional Programming

### Young Researcher

2013-2015

Observatorio de Restitución y Regulación de Derechos de la Propiedad Agraria. Bogotá, Colombia

- Text Data Mining, Machine Learning, Algorithms, Functional Programming

## Teaching Experience

### Mathematics Program

2011-2014

Sergio Arboleda University. Bogotá, Colombia

- Algorithms I 2011-2012, 2014
- Algorithms II 2011-2012, 2014
- Discrete Mathematics 2014
- Seminar of Competitive Programming 2014-2015

### Engineering Programs

2016-II

Instituto Tecnológico Metropolitano. Medellín, Colombia

- Linear Algebra \

- Linear Programming and Algebra

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## Education

### Master in Applied Mathematics

2016-present

(2 years)

EAFIT University. Medellín, Colombia.

*Emphasis in Logic, Type Theory, and Functional Programming.*

Thesis Title. Proof Reconstruction

Advisory. PhD. Andrés Sicard-Ramírez

### Bachelor in Mathematics

2007-2013

(5 years)

Sergio Arboleda University. Bogotá, Colombia.

*Emphasis in Computer Science*

Thesis Title. An Introduction to Elliptic Curves

Advisory. PhD. Hermes Jackson

## Publications

- Prieto-Cubides J., Argoty Camilo. *Dealing with Missing Data using a Selection Algorithm on Rough Sets*. 2017. International Journal of Computational Intelligence Systems. (Submitted)

## Open-Source Projects

### Athena

Haskell, Agda

<http://github.com/jonaprieto/athena>

Athena is a Haskell program that translates proofs given by Metis Prover in TSTP format to Agda code. This work was present in the *Agda Implementors' Meeting XXV* at Chalmers University.

### Agda-Prop

Agda

<http://github.com/jonaprieto/agda-prop>

Agda library to work with Classical Propositional Logic using a deep embedding. Natural deductions Proofs for around seventy theorems.

### Agda-Metis

Agda

<http://github.com/jonaprieto/agda-metis>

This library aims to provide the necessary functions and theorems for Athena to reconstruct proofs found by the automatic theorem prover, Metis.

### OnlineATPs

Haskell

<http://github.com/jonaprieto/online-atps>

OnlineATPs is a command-line client for TPTP World. We can use an online ATP as it would be running locally. Indeed, SystemOnTPTP has available more than forty automatic theorem provers and we take advantage of all.

Latex

### Curriculum-Vitae

<http://github.com/jonaprieto/curriculum-vitae>

This document was generated using this project. It makes easier maintain your Resume using LaTeX and Pandoc.

Python

### PonyWhoosh

<http://github.com/jonaprieto/ponywhoosh>

Integration between the Whoosh search engine and PonyORM, this library makes your database full-text searchable

Python

### Flask-PonyWhoosh

<http://github.com/jonaprieto/flask-ponywhoosh>

A web search engine for flask using PonyORM and Whoosh.

## Private Projects

Mathematica

### Poirot

Sergio Arboleda University, IEPRI, COLCIENCIAS

Poirot is a text search, a package, and analysis platform programmed in Mathematica®, designed for retrieval, analysis and systematization of large textual data (in the order of tens of thousands of files). Poirot is tailored for the needs of qualitative researchers, journalists, and state officials (in the judiciary, for example), that need to find specific textual bits in big masses of unstructured text.

## Languages

- English - B2
- Spanish - Native speaker

## Achievements

- Scholarship. Agda Implementors' Meeting XXV at Chalmers University. Gotenburg, Sweden.
- Scholarship to study the master program in applied mathematics at EAFIT University
- Financial support to study mathematics at Sergio Arboleda University
- Member of the the program for talent young of high school. Sergio Arboleda University
- ACM-ICPC 2013 Regional Programing Contest. 9th Place, WTF Team
- ACM-ICPC 2013 National Programing Contest. 11th Place. WTF Team
- Honor mention. Colombian Math Contest 2010
- Scholarship. Symposium ANTS X. San Diego, California. EEUU
- Early promotion at high school. 5th grade to 6th grade
- Early promotion at high school. 7th grade to 8th grade
- Honors Academic Excellence, 10 and 11 degree in the school
- National high school qualification exam ICES. 4th place/group
- McDonald's drawing contest for schools. 1th Place 1997

## References

- Phd. Andrés Sicard-Ramírez. asr@eafit.edu.co. Computer Science. EAFIT University
- Phd(c). Paola Lizarralde-Bejarano. dlizarra@eafit.edu.co. Mathematics. EAFIT University
- Phd. Camilo Argoty. argoty7@gmail.com. Mathematics. Sergio Arboleda University
- Phd. Esteban Hernández. Computer Science. eshernan@gmail.com Universidad Distrital de Bogotá.