Jonathan Prieto-Cubides

+47 46860287   Fredlundsvingen 3, 5073, Minde.
jcu043@uib.no, jprieto9@eafit.edu.co   Bergen, Norway
https://jonaprieto.github.io/
Date of Birth: 1991-04-18
Gender: Male
Citizenship: Colombia
Current Profession: Ph.D. Research Fellow

I'm a PhD student at the University of Bergen in the Informatics Department, working on the application of (homotopy) type theory to formalize mathematics. My supervisors are Marc Bezem and Håkon Robbestad Gylterud, and my research belongs to the programming research group (PUT).

Education

Ph.D. in computer science

2018-present

4 years

University of Bergen. Bergen, Norway
Emphasis in Type theory and functional programming

Thesis Title. Univalent graph theory

Advisory. Marc Bezem and Håkon Gylterud

Master in applied mathematics

2016-2017

2 years

EAFIT University. Medellín, Colombia.
Emphasis in Logic, type theory, and functional programming.

Thesis Title. Proof Reconstruction for Metis in Agda

Advisory. Andrés Sicard-Ramírez

Bachelor in Mathematics

2007-2013

5 years

Universidad Sergio Arboleda. Bogotá, Colombia.
Emphasis in Computer Science

Thesis Title. An Introduction to Elliptic Curves

Advisory. PhD. Hermes Jackson

MOOC courses in computer science

2019-2020

Coursera.org.
Emphasis in Parallel and Concurrent programming. Algorithms courses.

Research experience

Research fellow

University of Bergen. ICT Research Group. PUT.. Bergen, Norway

- Research topics about type theory, functional programming, Haskell, Agda

- TAing concurrent programming, mathematical logic, models of computation, and software engineering classes

2016-2017

Young research assistant

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

- Collaborate in the developed of Apia, a Haskell tool for combining interactive theorem provers with automatic theorem provers

- Research topics about type theory, agda, functional programming

2014-2015

Young researcher

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

- Reserach topics on text data mining, machine learning, algorithms, functional programming

Teaching experience

2016-II

Lecturing for the engineering undergraduate program.

Instituto Tecnológico Metropolitano. Medellín, Colombia

- Linear algebra   \
- Linear programming and algebra   \

2011-2014

Young lecturer

Universidad Sergio Arboleda. Bogotá, Colombia

- Algorithms I and II   2011-2012, 2014
- Discrete mathematics jointly with competitive programming training   2014-2015

Publications

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

- Prieto-Cubides j., Sicard-Ramirez Andres. *Proof-Reconstruction in Type Theory for Propositional Logic*. 2018. Master's thesis.

Open-source projects

Python

agda-pkg

http://github.com/agda/agda-pkg

Agda-pkg is the tool to manage libraries for the programming language Agda. This tool offers extra features like installing libraries from different kind of sources. It follows a similar approach as pip for the programming language Python.

Athena

http://github.com/jonaprieto/athena

Athena is a Haskell program that translates proofs given by Metis Prover in TSTP format to Agda code. I featured this work 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 avantage of all.

PonyWhoosh
Python

http://github.com/jonaprieto/ponywhoosh

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

Flask-PonyWhoosh
Python

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

A web search engine for the webframework flask with the usage of PonyORM and Whoosh.

Curriculum-Vitae
Latex, Bash

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

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

Private projects

Poirot, the full-text search engine with extra features
Mathematica

Universidad Sergio Arboleda, 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
- Spanish

Achievements

- First in class. 2017. Master in Applied Mathematics at EAFIT University.
- 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 Universidad Sergio Arboleda
- Member of a program with other talent young high school students at Universidad Sergio Arboleda
- 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 ICFES. 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. Universidad Sergio Arboleda
- Phd. Esteban Hernández. Computer Science. eshernan@gmail.com Universidad Distrital de Bogotá.