

Pedro da Costa Abreu Jr.

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"Nullius in verba"

Education

- 2018– **Programming Languages PhD Student**, *Purdue University*, IN, Advised by Dr. Benjamin Delaware.
- 2011–2017 **Bachelor Degree in Computer Science**, *University Of Brasilia (UnB)*, Brasilia.

Honours Thesis

- Title *Mechanization and Overhaul of Feature Featherweight Java using Coq*
- Supervisor Rodrigo Bonifácio
- Description In this work, we detail design decisions related to our process of first specifying *Featherweight Java* in Coq and then evolving such a specification to prove the safety of the type system an overhaul version of *Feature Featherweight Java*—a core-calculus for a family of languages that address variability management in highly configurable systems, such as software product lines.

Experience

Vocational

- 2018/1 **Intern**, *SiFive*, Unb, San Mateo.
On proving the correctness of the Floating Point Unit used by the RiscV processor, using Coq.
- 2017 **Researcher**, *Finatec & Brazilian Army*, Unb, Brasilia.
Modelling of the Army distribution system, using Alloy.
- 2015–2017 **Intern**, *Tribunal de Contas da União*, Brasilia.
Development and maintenance of different kinds of tests, such as integration, end to end, component, performance, etc.
- Summer 2014 **Intern**, *Trustworthy Systems*, NICTA, Sydney.
On the Verification of file systems using Isabelle.
- 2013–2014 **Scientific Initiation**, *CIC/UNB Formal Reasoning Group*, UnB, Brasilia.
Researched how to extend the rewrite tactics on Coq for a formalization of the lambda calculus with explicit substitutions.

Miscellaneous

- 2018/2 **Algebraic Effects**.
On the formalization of algebraic effects and the freer monad in Coq <https://github.com/jwiegle/define-freer>

- 2016/2 **Java Virtual Machine, UnB.**
Lead a team of 5 to develop a fully working JVM for bytecode generated with javac 5,
<https://github.com/pedrotst/JVM>
- 2014–2015 **Exchange, University of Sydney, Sydney.**
Fully funded by CNPq via the Science Without Borders program to study one year at USyd.

Languages

- Portuguese **Mother Tongue**
English **Fluent**
Spanish **Intermediate Understanding, Basic Speech**
French **Basic**
Esperanto **Advanced**

Computer skills

- Programming Language C/C++, Java, Python, Haskell, Coq, Isabelle
- Familiar With C#, SML/NJ, Java Bytecode, Alloy
- Web HTML, Javascript, Typescript, Angular2
- Test Frameworks Jasmine, Protractor, Concordion, JMeter, WebDriver
- IDE Vim, Spacemacs, IntelliJ Idea, Eclipse, CoqIDE
- VCS Git

Attended Conferences

- PLMW at POPL 2017 (Funded by ACM), Los Angeles, United States
- ITP 2017, Brasilia, Brazil
- OPLSS 2017 (Funded by Finatec and OPLSS), Portland, United States
- SBMF 2016 (Funded by UnB), Natal, Brazil
- CBSOft 2013 (Worked as Staff), Brasilia, Brazil

References

- Benjamin Delaware, Purdue – bendy@purdue.edu
- Muralidaran Vijayaraghavan, SiFive – vmurali@sifive
- Rodrigo Bonifácio, UnB – rbonifacio@cic.unb.br