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Pedro da Costa Abreu Júnior

"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 Advised by Dr. Rodrigo Bonifácio

Experience

Vocational

Summer 2020 **Intern**, *coq-of-ocaml*, Nomadic Labs, Paris/Remote.
Translating GADTs from OCaml to Coq, some details on this blog post

Summer 2019 **Intern**, *Amazon/RTI/ElectionGuard Team*, Galois, Portland.
Specifying and proving safety property of real world software using SAW-Script. And also a little of Coq specification for a voting protocol.

2018/1 **Intern**, *Kami Team*, SiFive, 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

2019/2 – Today **Coquedille**, *Purdue*.
Translating the Intrinsic Type Theory of Coq to the Extrinsic Type Theory of Cedille
`https://github.com/pedrotst/coquedille`

2017/2 **Mechanization and Overhaul of Feature Featherweight Java using Coq**, *UnB*.
We extended Featherweight Java with Features and proved its correctness
`https://github.com/pedrotst/hephaestus-pl/coqffj`

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.

Awards

2019 **ACM Graduate Teaching Assistant Award**, Purdue.
I was awarded by the Purdue ACM Chapter as the best Graduate TA in the department for the academic year of 2019, working under the supervision of Jeff Turkstra for the class CS240: Programming in C

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	Java Bytecode, Alloy, SAW, Dafny, LLVM
Web	HTML, Javascript, Typescript, Angular2
Test Frameworks	Jasmine, Protractor, Concordion, JMeter, WebDriver
IDE	Vim, Spacemacs, Intellij Idea, Eclipse
VCS	Git

Attended Conferences

- Present Poster at POPL 2020, New Orleans, United States
- Deepspec Summer School 2018, Princeton, United States
- 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
- Jeffrey Turkstra, Purdue – jeff@purdue.edu

- Rodrigo Bonifácio, UnB – rbonifacio@cic.unb.br