

Luís Eduardo de Souza Amorim

PhD in Computer Science | Brazilian and Australian PR | 07/06/1989

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WORK EXPERIENCE

Research Fellow | Australian National University, Australia

October 2019 – Present

Implementing an LLVM backend for the Mu MicroVM machine (microvm.github.io), which enabled exploring its integration with the MMTk memory management toolkit (www.mmtk.io), and provided a set of garbage collectors available to Mu. This work led to an exploratory investigation on the MMTk support for LLVM-based managed languages, including the Julia programming language (<https://julialang.org>). A MMTk-Julia binding can be found at github.com/udesou/mmtk-julia.

Researcher and Software Developer | Delft University of Technology, The Netherlands

January 2014 – June 2019

Assisting with the development of the Spoofox Language Workbench (www.spoofox.dev). I worked on integrating syntactic code completion for the Eclipse IDE into Spoofox, so that language users can get code completion automatically from their language definitions. Furthermore, I developed a parse table generator, which generates parse tables for definitions in SDF3 (www.spoofox.dev/references/syntax). Finally, I have also contributed to the Java implementation of a Scannerless Generalised LR parser, adding data-dependency and layout-sensitive features to it.

Teaching Assistant and Guest Lecturer | Delft University of Technology, The Netherlands

September 2015 – December 2015 and April 2016 – July 2016

Lecturing, preparing assignments, grading and assisting students with lab activities for the Compiler Construction and Language Engineering courses. In these courses, students have to implement various programming languages using the Spoofox Language Workbench.

Researcher/Teaching Assistant | Universidade Federal de Viçosa, Brazil

2011 – 2013

Assisting Vladimir Di Iorio with various research tasks on programming languages, aspect oriented programming and parsing expression grammars. Tasks also included teaching assistance in Formal Languages and Automata and Compiler Construction.

EDUCATION

Delft University of Technology, the Netherlands (2014-2019)

On 19 June 2019, I graduated with a PhD in Computer Science with the thesis Declarative Syntax Definition for Modern Language Workbenches under the supervision of Prof. Dr. Eelco Visser. My research focused on syntax analysis in the context of the Spoofox Language Workbench, assisting language engineers to develop new domain specific languages and derive integrated development environments (IDEs) for language users. I was awarded a full scholarship, including a monthly stipend, from the Coordination for the Improvement of Higher Level Personnel (CAPES - Brazil) to support my studies.

Universidade Federal de Viçosa, Brazil (2011-2013)

On 29 October 2013, I graduated with a Master's Degree in Computer Science under the supervision of Prof. Dr. Vladimir Oliveira Di Iorio. My thesis, entitled Reusable Language Specifications, analysed syntax definitions in the context of the tool ANTLR 3. It addressed the problem of decoupling syntax from semantic language specifications in order to assist language developers to reuse their specifications. I was awarded a full scholarship, including a monthly stipend, from the Coordination for the Improvement of Higher Level Personnel (CAPES - Brazil) to support my studies.

Universidade Federal de Viçosa, Brazil (2008 – 2011)

On 4 August 2011, I graduated with a Bachelor in Computer Science. My final project involved developing a syntax definition for the language AspectJ. I graduated with honours and was awarded the Arthur Bernardes Silver Medal for academic excellence.

PUBLICATIONS

1. AMORIM, Luis Eduardo de Souza; VISSER, Eelco. Multi-purpose Syntax Definition with SDF3. In 18th International Conference of Software Engineering and Formal Methods, 2020, Amsterdam, The Netherlands.
2. AMORIM, Luis Eduardo de Souza; STEINDORFER, J. Michael; ERDWEG, Sebastian; VISSER, Eelco. Declarative Specification of Indentation Rules: A Tooling Perspective on Parsing and Pretty-Printing Layout-Sensitive Languages. In 11th ACM SIGPLAN International Conference on Software Language Engineering, 2018, Boston, MA, United States. (**distinguished paper award**)
3. AMORIM, Luis Eduardo de Souza; STEINDORFER, J. Michael; VISSER, Eelco. Towards Zero-Overhead Disambiguation of Deep Priority Conflicts. In The Art, Science, and Engineering of Programming 2018.
4. AMORIM, Luis Eduardo de Souza; STEINDORFER, J. Michael; VISSER, Eelco. Deep Priority Conflicts in the Wild: A Pilot Study. In 10th ACM SIGPLAN International Conference on Software Language Engineering, 2017, Vancouver, Canada.

5. AMORIM, Luis Eduardo de Souza; ERDWEG, Sebastian; WACHSMUTH, Guido; VISSER, Eelco. Principled Syntactic Code Completion using Placeholders. In 9th ACM SIGPLAN International Conference on Software Language Engineering, 2016, Amsterdam, The Netherlands.
6. AMORIM, Luis Eduardo de Souza; WACHSMUTH, Guido; VISSER, Eelco. Improving Syntactic Completion. In: Parsing@SLE workshop, 2015, Pittsburgh, United States. (workshop presentation)
7. AMORIM, Luis Eduardo de Souza; WACHSMUTH, Guido; VISSER, Eelco. Developing SDF3. In: Parsing@SLE workshop, 2014, Västerås, Sweden. (workshop presentation)
8. REIS, Leonardo Vieira dos Santos; BIGONHA, R. S.; DI IORIO, Vladimir Oliveira; AMORIM, Luis Eduardo de Souza. Adaptable Parsing Expression Grammars. In: XVI Brazilian Symposium on Programming Languages, 2012, Natal. Lecture Notes in Computer Science, 2012. v. 7554. p.72-86.
9. AMORIM, Luis Eduardo de Souza; GONCALVES, L. B.; MAGALHAES, S. V. G. . Um Algoritmo Memético para a solução do Problema de Mínima Latência. In: XVI CLAIO / XLIV SBPO, 2012, Rio de Janeiro. XLIV Simpósio Brasileiro de Pesquisa Operacional, 2012.