GUSTAVO LEITE

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EDUCATION

BSc in Computer Science *2013–2016*
São Paulo State University (UNESP) *Rio Claro-SP, Brazil*
I finished the course with grade 8.58 out of 10, placed as the first student of the class. I developed a study on parallel computing with application to the n-body problem as my final paper. This work was supervised by Prof. Alexandro Baldassin.

MSc in Computer Science *2017–2019*
São Paulo State University (UNESP) *Rio Claro-SP, Brazil*
I obtained grade A in 5 out of 6 courses attended. I defended the thesis titled "Performance Evaluation of Code Optimizations in FPGA Accelerators" in August, 2019 under supervision of Prof. Alexandro Baldassin.

Complementary Training *2018*
University of Alberta *Edmonton-AB, Canada*
During a research internship, I audited two courses on compilers in the University of Alberta. The courses were "Compiler Design" and "Machine Learning in Optimizing Compilers", both lectured by Prof. José Nelson Amaral during the Fall of 2018.

PhD in Computer Science *2020–present*
University of Campinas (Unicamp) *Campinas-SP, Brazil*
I am currently a PhD student at the University of Campinas, working on the Computer Systems Laboratory (LSC) under the supervision of Prof. Guido Araújo and Prof. Marcio Machado Pereira.

AWARDS AND DISTINCTIONS

Best Academic Performance ⬦ UNESP *2017*
In March 2017, I was awarded a distinction from the São Paulo State University for the best academic performance in the Bachelors in Computer Science 2016's class.

Winner of the Parallel Programming Challenge ⬦ ERAD-SP, ICMC-USP *2017*
In April 2017, my team won the Parallel Programming Challenge carried during the 8th Regional School of High-Performance (ERAD-SP), ICMC-USP, São Carlos-SP, Brazil.

INTERESTS

Following, a non-exhaustive list of my professional and research interests:

- high-performance computing;
- compilers;
- cloud computing;
- computer architecture.

PROFESSIONAL EXPERIENCE

I do not have professional experience.

RESEARCH EXPERIENCE

Self-Healing Software *2014–2015*
São Paulo State University (UNESP) *Rio Claro-SP, Brazil*
During the bachelors course, I have participated in two research projects aimed at developing better

recommendation systems to assist decision-making in self-healing systems. I was supervised by Prof. Frank José Affonso and received funding from CNPq and FAPESP. During this period I coauthored two papers published in international conferences [1, 2].

Parallel Programming   *2016*
São Paulo State University (UNESP)   *Rio Claro-SP, Brazil*
I have developed a term paper where I studied the parallel programming paradigm using OpenMP and OpenCL. With the knowledge obtained, I compared the performance of implementations in CPU and GPU of the n-body problem. This work was supervised by Prof. Alexandro Baldassin.

High-Performance Computing   *2017–2019*
São Paulo State University (UNESP)   *Rio Claro-SP, Brazil*
During the masters course, I have investigated workload balancing techniques for NUMA systems and, after that, I have analyzed the performance of code optimizations aimed at FPGA accelerators present in the literature. I defended the thesis titled "Performance Evaluation of Compiler Optimizations in FPGA Accelerators" [3] in August 2019 under the supervision of Prof. Alexandro Baldassin. This work was carried with funding from CAPES and FAPESP. During this period I have also been a teacher assistant in the undergrad course "Microprocessors II".

High-Performance Computing   *2018*
University of Alberta   *Edmonton-AB, Canada*
I visited the University of Alberta between September 2018 and November 2018 for a research internship. The objetive of this project was to conduct a bibliographic survey on existing compiler optimizations for FPGA accelerators. I was co-supervised by Profs. José Nelson Amaral (UAlberta) and Guido Araújo (IC-Unicamp). This internship was funded by the BEPE/FAPESP program. From this collaboration, we published a paper in a brazilian conference [4].

SKILLS AND LANGUAGE

Programming Languages

Over 5K lines	C, C++, Java, Python
Over 1K lines	OpenCL, Gnuplot, ANTLR4 grammar
Familiar	Assembly, AWK, PHP, Bash, CUDA, Javascript

Tools (Ordered by familiarity)

- Linux operating system and utilities (`grep`, `bash`, `awk`, `make`, etc);
- C/C++ compilers (`gcc` and `clang`);
- Control version system (`git`) and platforms (Github, Gitlab, etc);
- Parallel programming paradigms (OpenMP, OpenCL);
- Python packages (`numpy`, `matplotlib`, `seaborn`);
- Debuggers (`gdb`) and profilers (`perf`, `strace`, `ltrace`);
- LLVM compiler infrastructure.

Languages Proficiency

- **Portuguese** (Native) – comprehension: good; speaking: good; writing: good;
- **English** (Fluent) – comprehension: good; speaking: good; writing: good;
- **German** (Beginner/A2) – comprehension: basic; speaking: none; writing: basic;

EVENT ATTENDANCE

SBAC-PAD'17 ◇ Campinas-SP, Brazil   *2017*
International Symposium on Computer Architecture and High Performance Computing

8ª ERAD-SP ◇ ICMC-USP, São Carlos-SP, Brazil   *2017*
Escola Regional de Alto Desempenho do Estado de São Paulo

LINKS

Github	`https://github.com/leiteg`
Gitlab	`https://gitlab.com/leiteg`
Twitter	`https://twitter.com/gstvleite`
Google Scholar	`https://scholar.google.com/citations?user=F6MZj_oAAAAJ`
Lattes Curriculum	`https://lattes.cnpq.br/0392351138118593`
LSC Homepage	`https://lsc.ic.unicamp.br/`

PUBLICATIONS

[1] F. J. Affonso, G. Leite, and E. Y. Nakagawa. Dms-modeler: A tool for modeling decision-making systems for self-adaptive software domain. In *SEKE*, volume 16, pages 617–622, 2016.

[2] F. J. Affonso, G. Leite, R. A. P. Oliveira, and E. Y. Nakagawa. A framework based on learning techniques for decision-making in self-adaptive software. In *SEKE*, volume 15, 2015.

[3] G. Leite. Performance evaluation of compiler optimizations in FPGA accelerators. Master's thesis, Universidade Estadual Paulista, São José do Rio Preto-SP, Brasil, Aug 2019.

[4] G. Leite, A. Baldassin, G. Araújo, and J. N. Amaral. Performance evaluation of compiler optimizations in FPGA accelerators. In *2019 Symposium on High Performance Computing Systems (WSCAD)*, Oct 2019.