CURRICULUM VITÆ

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1 Address

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2 Education

(2010–2014) Ph.D., Computer Science, *cotutelle* agreement between:

- Federal University of Rio Grande do Sul (UFRGS), Brazil.
- Grenoble University, Grenoble, France.

(2007–2009) M.S, Computer Science, Federal University of Rio Grande do Sul (UFRGS) , Brazil.

(2003–2007) B.S, Computer Science, Federal University of Santa Maria (UFSM), Brazil.

3 Areas of Interest

High performance computing, accelerators, parallel programming, energy efficiency, cluster computing, network security, big data.

4 Experience

4.1 Teaching

- (07/2014 – current) Associate Professor at the Federal University of Santa Maria (UFSM), Santa Maria, RS, Brazil.

4.2 Research

- (3/2015 – current) Advisor at the Graduate Program in Computer Science at UFSM (master course).
- (03/2012 – 02/2013) Research at Laboratoire d'Informatique de Grenoble, Grenoble University, France, supported by CAPES/Brazil scholarship.

- (03/2010 – 02/2011) Research at Instituto de Informática, UFRGS, Brazil, supported by CNPq/Brazil scholarship.
- (09/2010 – 02/2011) Research at Laboratoire d'Informatique de Grenoble, Grenoble University, France, supported by Erasmus Mundus EBWII scholarship.
- (04/2009 – 02/2010) Research at Instituto de Informática, UFRGS, Brazil, supported by CNPq/Brazil scholarship in project *Massive Atmosphere*.
- (03/2007 – 03/2009) Research at Instituto de Informática, UFRGS, Brazil, supported by CAPES/Brazil scholarship, working on granularity of MPI-2 dynamic programs with processes and threads at runtime.

4.3 System Administrator

- (08/2005 – 02/2007) System administrator at Núcleo de Ciência da Computação (NCC), UFSM, suported by PRAE/UFSM and CPD/UFSM.

4.4 Employment

- (09/2003–07/2005) CPD/UFSM SIE application and report development in Delphi.

5 Awards

- First Place at the 6th Marathon of Parallel Programming - SBAC-PAD 2011 (SBC), Brazil.
- First Place at the 2nd GPU Programming Contest - SBAC-PAD 2011 (SBC), Brazil.
- Erasmus Mundus Euro Brazilian Windows II (EBWII) scholarship for 6 months (09/2010–02/2011), European Commission.

6 Teaching

I teach mainly programming lectures at the undergraduate course of Computer Science at UFSM since 2014.

- ELC1067 - Laboratório de Programação II, 2nd semester 2019, 4 hours peer week.
- ELC1016 - Sistemas Operacionais, 2nd semester 2019, 4 hours peer week.
- ELC1035 - Prática em Sistemas Operacionais (*Operating System Practice*), 1st semester 2019, 4 hours peer week.
- ELC106 - Algoritmo e Programação, 1st semester 2019, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 2nd semester 2018, 4 hours peer week.
- ELC1016 - Sistemas Operacionais, 2nd semester 2018, 4 hours peer week.
- DLSC801 - Computational Science, 1st semester 2018, 4 hours peer week.
- ELC1068 - Pesquisa e Ordenação de Dados "A", 1st semester 2018, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 2nd semester 2017, 4 hours peer week.
- ELC1035 - Prática em Sistemas Operacionais (*Operating System Practice*), 2nd semester 2017, 4 hours peer week.

- ELC1068 - Pesquisa e Ordenação de Dados "A", 1st semester 2017, 4 hours peer week.
- ELC106 - Algoritmo e Programação, 1st semester 2017, 4 hours peer week.
- ELC1035 - Prática em Sistemas Operacionais (*Operating System Practice*), 2nd semester 2016, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 2nd semester 2016, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 1st semester 2016, 4 hours peer week.
- ELC106 - Lógica e Programação, 1st semester 2016, 4 hours peer week.
- ELC1066 - Estruturas de Dados "A", 2nd semester 2015, 4 hours peer week.
- ELC106 - Lógica e Programação, 2nd semester 2015, 4 hours peer week.
- ELC1068 - Pesquisa e Ordenação de Dados "A", 1st semester 2015, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 1st semester 2015, 4 hours peer week.
- ELC1067 - Laboratório de Programação II, 2nd semester 2014, 4 hours peer week.
- ELC137 - Sistemas de Informação Distribuídos, 2nd semester 2014, 4 hours peer week.

7 Supervision

7.1 Master students

- Lucas Ferreira da Silva (2019–): Big Data Processing with Low Power Devices.
- Rafael Gauna Trindade (2018–): Parallel Adaptive Loop Algorithms for Asymetric Multicore Processors.
- Alexsander Haas (2017–2019): A Big Data System for Network Traffic Analysis.
- Gabriel Freytag (2016–2018): A Data-Flow Task-based Implementation of the Lattice-Boltzmann Method.
- Daniel Di Domenico (2015–2017): HPSM: A C++ API for Parallel Loop Programs Supporting Multi-CPUs and Multi-GPUs.

7.2 Undergraduate students

- Andre Rakowski (2018–): Signal Processing of IoT Devices on Railway Systems.
- Rafael Gauna Trindade (2016–2017): C++ Programming Interfaces for Scientific Applications.
- Pedro Langbecker Lima (2015–2016): Scientific Applictions using OpenMP 4.

8 Software

1. **GitHub** Web site: `https://github.com/joao-lima`.
2. **XKaapi** I have been involved in the development of the XKaapi runtime system since 2010. Web site: `http://kaapi.gforge.inria.fr`.

9 Publications

Google scholar link: `https://scholar.google.com.br/citations?user=jb6bKmoAAAAJ`

9.1 International peer-reviewed journal

- João V. F. Lima, Daniel Di Domenico. "HPSM: A Programming Framework to Exploit Multi-CPU and Multi-GPU Systems Simultaneously". *International Journal of Grid and Utility Computing*, v. 10, p. 201-211, 2019.
- João V. F. Lima, Issam Raïs, Laurent Lefèvre, and Thierry Gautier. "Performance and energy analysis of OpenMP runtime systems with dense linear algebra algorithms". *International Journal of High Performance Computing Applications*, v. 33, p. 431-443, 2018.
- Daniel Di Domenico, João V. F. Lima, Andrea S. Charão. "OpenMP with parallel loops or asynchronous tasks: a performance evaluation focusing the NQueens benchmark". *IEEE Latin America Transactions*, v. 15, p. 1793-1800, 2017.
- João V. F. Lima, Thierry Gautier, Vincent Danjean, Bruno Raffin, and Nicolas Maillard. "Design and Analysis of Scheduling Strategies for Multi-CPU and Multi-GPU Architectures". *Parallel Computing*, p. 37-52, 2015.
- João V. F. Lima, Nicolas Maillard. "Online mapping of MPI-2 dynamic tasks to processes and threads". *International Journal of High Performance Systems Architecture (IJHPSA)*, v. 2, pp. 81-89, 2009.

9.2 International peer-reviewed conference proceedings

- Gabriel Freytag, Matheus S. Serpa, João V. F. Lima, Paolo Rech, Philippe O. A. Navaux. "Non-Uniform Partitioning for Collaborative Execution on Heterogeneous Architectures". *31th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)*, Campo Grande, Brazil, 2019. (Accepted for publication)
- João V. F. Lima, Gabriel Freytag, Vinicius G. Pinto, Claudio Schepke, Philippe O. A. Navaux. " A Dynamic Task-Based D3Q19 Lattice-Boltzmann Method for Heterogeneous Architectures". *27th Euromicro International Conference on Parallel, Distributed and NetworkBased Processing (PDP)*, Pavia, Italy, 2019.
- Gabriel Freytag, Philippe O. A. Navaux, João V. F. Lima, Lucas M. Schnorr, Paolo Rech. "Non-Uniform Domain Decomposition of the Lattice-Boltzmann Method for Heterogeneous Accelerated Processing Units". *3th International Meeting on High Performance Computing for Computational Science (VECPAR 2018)*, São Pedro, SP, Brazil, 2018.
- Rafael G. Trindade, João V. F. Lima, Andrea S. Charão. "Performance Evaluation of Deep Learning Frameworks over Different Architectures". *3th International Meeting on High Performance Computing for Computational Science (VECPAR 2018)*, São Pedro, SP, Brazil, 2018.
- Raphaël Bleuse, Thierry Gautier, João V. F. Lima, Gregory Mounie, and Denis Trystram. "Scheduling data flow program in XKaapi: A new affinity-based algorithm for heterogeneous architectures". *Proc. of the 20th Euro-Par*, 2014, Porto, Portugal.
- João V. F. Lima, François Broquedis, Thierry Gautier, and Bruno Raffin. "Preliminary Experiments with XKaapi on Intel Xeon Phi Coprocessor". *25th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)*, Porto de Galinhas, Brazil, 2013.

- Thierry Gautier, João V. F. Lima, Nicolas Maillard, and Bruno Raffin. "XKaapi: A Runtime System for Data-Flow Task Programming on Heterogeneous Architectures". *2013 IEEE 27th International Symposium on Parallel Distributed Processing (IPDPS)*, p. 1299–1308, 2013.
- Thierry Gautier, João V. F. Lima, Nicolas Maillard, and Bruno Raffin. "Locality-Aware Work Stealing on Multi-CPU and Multi-GPU Architectures". *6th Workshop on Programmability Issues for Heterogeneous Multicores (MULTIPROG)*, p. 51–62, Berlin, Germany, 2013.
- João V. F. Lima, Thierry Gautier, Nicolas Maillard, and Vincent Danjean. "Exploiting Concurrent GPU Operations for Efficient Work Stealing on Multi-GPUs". *24th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)*, p. 75–82, New York, NY, USA, 2012.
- Marco A. Z. Alves, Márcia C. Cera, João V. F. Lima, Nicolas Maillard, and Philippe O. A. Navaux. "Enhancing Energy Efficiency using Efficient Parallel Programming Techniques". *3o Conferencia Latino Americana de Computación de Alto Rendimiento (CLCAR 2010)*, p. 117–124, Gramado, Brazil, 2012.

9.3 Other conference proceedings

- Márcia C. Cera, João V. F. Lima, Nicolas Maillard, and Philippe O. A. Navaux. "Challenges and Issues of Supporting Task Parallelism in MPI". *17th European MPI Users' Group Meeting (EuroMPI 2010)*, p. 302–305, Stuttgart, Germany, 2010.