LIST OF PUBLICATIONS

Table 2: Summary

International journals	7
International conferences	14
National conferences	5
Accepted for presentation	2
Research reports and publ. under review	3
Software development	2
Total	33

Selected publications:

- **[1]** Carneiro, T.; Melab, N.; Hayashi, A.; Sarkar, V. Towards Chapel-based Exascale Tree Search Algorithms: dealing with multiple GPU accelerators. In: The International Conference on High Performance Computing & Simulation - HPCS 2020 - held in March 2021. **Outstanding Paper Award**.
- **[2]** Gmys, J.; Carneiro, T.; Melab, N.; Tuyttens, d.; Talbi, E-G. A Comparative Study of High-productivity High-performance Programming Languages for Parallel Metaheuristics. Swarm and Evolutionary Computation, 57:100720 (2020). DOI: 10.1016/j.swevo.2020.100720.
- **[3]** Carneiro, T.; Gmys, J.; Melab, N.; Tuyttens, D.Towards Ultra-scale Branch-and-Bound Using a High-productivity Language. Future Generation Computer Systems, 105: 196-209 (2020). DOI: 10.1016/J.future.2019.11.011.
- **[4]** Carneiro Pessoa, T.; Gmys, J.; de Carvalho Junior, F. H.; Melab, N.; Tuyttens, D. GPU-accelerated Backtracking Using CUDA Dynamic Parallelism. Concurrency and Computation: Practice and Experience, Wiley Online Library, 30(9): e4374 (2018). DOI: 10.1002/cpe.4374.
- **[5]** Carneiro, T.; Medeiros da Nóbrega, R.V; Nepomuceno, T.; Bian, G-B; de Albuquerque, V.H.; Rebouças Filho, P.P. Performance Analysis of Google Colaboratory as a Tool for Accelerating Deep Learning Applications. IEEE Access, 6: 61677-61685 (2018). DOI: 10.1109/ACCESS.2018.2874767.
- **[6]** Pessoa, T.C.; Gmys, J.; Melab, N.; de Carvalho Junior, F.H.; Tuyttens, D. A GPU-based Backtracking Algorithm for Permutation Combinatorial Problems. In: Algorithms and Architectures for Parallel Processing - IC3APP 2016. Lecture notes in computer science, vol. 10048 (310-324), Springer. DOI: 10.1007/978-3-319-49583-5_24.
- **[7]** Carneiro, T.; Muritiba, A.E.; Negreiros, M.; de Campos, G.A.L. A New Parallel Schema for Branch-and-bound Algorithms Using GPGPU. In: 23*rd* International Symposium on Computer Architecture and High Performance Computing - SBAC-PAD 2011. p. 41–47. DOI: 10.1109/sbac-pad.2011.20.

International journal publications:

- **[2021]** de Souza, A.B.; do Rego, P.A.L; Carneiro, T.; Rocha, P.H.G; de Souza, J.N. A Context-Oriented Framework for Computation Offloading in Vehicular Edge Computing using WAVE and 5G Networks. Vehicular Communications. DOI: 10.1016/j.vehcom.2021.100389 *Impact factor: 6.91*
- **[2020]** Carneiro, T.; Gmys, J.; Melab, N.; Tuyttens, D.Towards Ultra-scale Branch-and-Bound Using a High-productivity Language. Future Generation Computer Systems, 105: 196-209 (2020). DOI: 10.1016/J.future.2019.11.011. *Impact factor: 7.187*
- **[2020]** Gmys, J.; Carneiro, T.; Melab, N.; Tuyttens, d.; Talbi, E-G. A Comparative Study of High-productivity High-performance Programming Languages for Parallel Metaheuristics. Swarm and Evolutionary Computation, 57:100720 (2020). DOI: 10.1016/j.swevo.2020.100720. *Impact factor: 7.177*

- [**2020**] Souza, A.B.; Rego, P.A.L.; Carneiro, T.; Rodrigues, J.D.C.; Rebouças Filho, P.P.; De Souza, J.N; Chamola, V.; Sikdar, B.; de Albuquerque, V.H.C. Computational Offloading for Vehicular Environments: A Survey. IEEE Access. DOI: 10.1109/ACCESS.2020.3033828. *Impact factor: 3.367*

- [**2019**] Almeida, J.S.; Rebouças Filho, P.P.; Carneiro, T.; Wei, W.; Damasevicius, R.; Maskeliunas, R.; de Albuquerque, V.H.C. Detecting Parkinson's Disease With Sustained Phonation and Speech Signals Using Machine Learning Techniques. Pattern Recognition Letters, 125: 55-62 (2019). DOI: 10.1016/J.patrec.2019.04.005. *Impact factor: 3.756*

- [**2018**] Carneiro, T.; Medeiros da Nóbrega, R.V; Nepomuceno, T.; Bian, G-B; de Albuquerque, V.H.; Rebouças Filho, P.P. Performance Analysis of Google Colaboratory as a Tool for Accelerating Deep Learning Applications. IEEE Access, 6: 61677-61685 (2018). DOI: 10.1109/ACCESS.2018.2874767. *Impact factor: 3.367*

- [**2017**] Carneiro Pessoa, T.; Gmys, J.; de Carvalho Junior, F. H.; Melab, N.; Tuyttens, D. GPU-accelerated Backtracking Using CUDA Dynamic Parallelism. Concurrency and Computation: Practice and Experience, Wiley Online Library, 30(9):e4374 (2017). DOI: 10.1002/cpe.4374. *Impact factor: 1.536*

Peer-reviewed international conferences:

- [**2021**] Carneiro, T.; Melab, N.; Hayashi, A.; Sarkar, V. Towards Chapel-based Exascale Tree Search Algorithms: dealing with multiple GPU accelerators. In: The International Conference on High Performance Computing & Simulation - HPCS 2020 - held in March 2021. **Outstanding Paper Award** *Core rank: B*[2]

- [**2020**] de Souza, A.B; Rego, P.A.L; Rocha, P.H.G; Carneiro, T.; Souza, J.N. A Task Offloading Scheme for WAVE Vehicular Clouds and 5G Mobile Edge Computing. In: IEEE Global Communications Conference - Globecom 2020. *Core rank: B*

- [**2020**] Nepomuceno, T.; Carneiro, T.; Maia, P; Nepomuceno, T.; Adnan, M.; Martin, A. Autoiot: a framework based on user-driven MDE for generating IoT applications. In: ACM/SIGAPP Symposium on Applied Computing - SAC 2020. DOI: 10.1145/3341105.3373873. *Core rank: B*.

- [**2019**] Carneiro, T.; Melab, N. An Incremental Parallel PGAS-based Tree Search Algorithm. In: The 2019 International Conference on High Performance Computing & Simulation - HPCS 2019, pp. 19-26, DOI: 10.1109/HPCS48598.2019.9188106. *Core rank: B*

- [**2019**] Carneiro, T.; Melab, N. Productivity-aware Design and Implementation of Distributed Tree-based Search Algorithms. In: The International Conference on Computational Science - ICCS 2019. Lecture notes in computer science, vol. 11536 (253-266), Springer. DOI: 10.1007/978-3-030-15996-2_2. *Core rank: A*

- [**2018**] Carneiro, T.; Gmys, J.; Melab, N.; de Carvalho Junior, F. H.; Rebouças Filho, P.P.; Tuyttens, D. Dynamic Configuration of CUDA Runtime Variables for CDP-based Divide-and-conquer Algorithms. In: 13^{th} International Meeting on High Performance Computing for Computational Science - VECPAR 2018. Lecture notes in computer science, vol. 11333 (16-30), Springer. DOI: 10.1007/978-3-030-15996-2_2. *Core rank: B*

- [**2018**] Nepomuceno, T.; Carneiro, T.; Korn, C.; Martin, A. A GUI-based Platform for Quickly Prototyping Server-side IoT Applications. In: European Conference on Smart Objects, Systems and Technologies - Smart Systech 2018.

- [**2016**] Pessoa, T.C.; Gmys, J.; Melab, N.; de Carvalho Junior, F.H.; Tuyttens, D. A GPU-based Backtracking Algorithm for Permutation Combinatorial Problems. In: Algorithms and Architectures

[2]The Core Rank presented corresponds to the year of 2020.

for Parallel Processing - IC3APP 2016. Lecture notes in computer science, vol. 10048 (310-324), Springer. DOI: 10.1007/978-3-319-49583-5_24. *Core rank: B*

- [**2014**] Pinheiro, A.B.; de Carvalho Junior, F.H.; Arruda, N.G.P.B.; Carneiro, T. Fusion: abstractions for multicore/manycore heterogenous parallel programming using GPUs. In: Brazilian Symposium on Programming Languages - SBLP 2014. Lecture notes in computer science, vol. 8771 (109-123), Springer. DOI: 10.1007/978-3-319-11863-5_8. *Core rank: B*

- [**2014**] Carneiro, T.; Arruda, N.G.P.B.; de Carvalho Junior, F.H.; Pinheiro, A.B. A Literature Review on Solving Combinatorial Optimization Problems Through the Use of GPUs - **text in Portuguese:** (*Um levantamento na literatura sobre a resolução de problemas de otimização combinatória através do uso de aceleradores gráficos*). In: XXXV Ibero-latin American Congress on Computational Methods in Engineering - CILAMCE 2014.

- [**2014**] Arruda, N.G.P.B.; de Carvalho Junior, F.H.; Carneiro, T.; Pinheiro, A.B. An Evaluation of Code Optimization Techniques Applied to Modern Graphics Accelerators - **text in Portuguese:** (*uma avaliação de técnicas de otimização de código aplicadas a aceleradores gráficos modernos*). In: XXXV Ibero-latin American Congress on Computational Methods in Engineering - CILAMCE 2014.

- [**2011**] Carneiro, T.; Muritiba, A.E.; Negreiros, M.; de Campos, G.A.L. A New Parallel Schema for Branch-and-bound Algorithms Using GPGPU. In: 23*rd* International Symposium on Computer Architecture and High Performance Computing - SBAC-PAD 2011. p. 41–47. DOI: 10.1109/sbac-pad.2011.20. *Core rank: B*

- [**2011**] Oliveira, T.Q. ; Pessoa, T.C. ; Cardoso, A. ; Celestino Júnior, J. Wchord: a hybrid and bio-inspired architecture to peer to peer networks. In: Third World Congress on Nature and Biologically Inspired Computing - NABIC 2011. p. 353–358, DOI: 10.1109/nabic.2011.6089617.

- [**2011**] Carneiro, T.; Muritiba, A.E.F.; Negreiros, M.; de Campos, G.A.L. Solving ATSP Hard Instances by New Parallel Branch and Bound Algorithm using GPGPU. In: XXXII Ibero-latin American Congress on Computational Methods in Engineering - CILAMCE 2011.

Peer-reviewed national conferences:

- [**2018**] Honório Filho, P.; da Silva, S.P.P.; Almeida, J.S.; Marinho, L.B.; Carneiro, T.; Rodrigues, A.W.O.; Rebouças Filho, P.P. An Approach to Navigation in Outdoor and Indoor Environments With Unmanned Aerial Vehicle Using Visual Topological Map. In: 31*st* Conference on Graphics, Patterns and Images - SIBGRAPI 2018, Workshop of Works in Progress (WIP).

- [**2016**] Nepomuceno, T.G.; Pessoa, T.C.; Nepomuceno, T.G. Formula Optimizer: fast way to formulate and solve multi-objective combinatorial optimization problems. In: XLVIII Brazilian Symposium of Operations Research - SBPO 2016.

- [**2014**] Arruda, N.G.P.B.; de Carvalho Junior, F.H.; Carneiro, T.; Pinheiro, A.B. Analysis of Drawbacks in Loop Unfolding Relative to GPU Associative Caches - text in Portuguese (*Análise de drawbacks no desdobramento de laços relativo a caches associativas de GPUs*). In: Symposium on High Performance Computing Systems - WSCAD 2014.

- [**2012**] Carneiro, T.; Nobre, R.H.; Negreiros, M.; de Campos, G.A.L. Depth-first Search Versus Jurema Search on GPU Branch-and-Bound Algorithms: a case study. In: NVIDIA's GPU Computing Developer Forum. Held by the XXXII Congress of the Brazilian Society of Computer Science - CSBC 2012.

- [**2010**] Pessoa, T.C.; Gomes, M.J.N. Jurema, a New Branch & Bound Anytime Algorithm for the Asymmetric Travelling Salesman Problem. In: XLIII Brazilian Symposium of Operations Research - SBPO 2010.

Project proposal:

- [**2021**] Melab, N.; Talbi, E-G.; Carneiro, T.; Gmys, J.; Danoy, G.; Bouvry, P.; Pinel, F.; Kieffer, E. *Ultra-scale Computing for solving Big Optimization Problems.* Joint project proposal between INRIA Lille - Bonus team and the University of Luxembourg. **Proposal submitted to the French National Research Agency** (ANR).

Papers accepted for presentation:

- [**2021**] Koutsantonis, L.; Carneiro, T.; Kieffer, E.; Pinel, F.; Bouvry, P. *A Data-Driven Reconstruction Technique based on Newton's Method for Emission Tomography.* In: The 2021 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS-MIC).
- [**2021**] Koutsantonis, L.; Makki, A.; Carneiro, T.; Kieffer, E.; Bouvry, P. *A Bayesian Optimization Approach for AttenuationCorrection in SPECT Brain Imaging.* In: The 2021 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS-MIC).

Other research reports:

- [**2017**] Pessoa, T.C. (2017), GPU-based Backtracking Strategies for Solving Permutation Combinatorial Problems. PhD Thesis, Department of Computer Science, Federal University of Ceará (UFC), Brazil.
- [**2012**] Pessoa, T.C. (2012), GPU-based Branch-and-bound Algorithms for the Asymmetric Travelling Salesman Problem (*text in Portuguese*). Master's thesis, Department of Computer Science, State University of Ceará (UECE), Brazil.

SOFTWARE PRODUCTION

- **Monte Carlo simulator of Y-photon propagation in voxelized structures**: high-performance GPU implementation (CUDA) of an Monte Carlo (MC) simulator of photon propagation in matter. The simulator uses anatomical information provided in voxelized formats by CT scans to simulate the absorption and scattering (Klein-Nishina) of photons in the volume of interest. The simulator was developed to be used for medical imaging and especially to provide data for AI applications. It uses GPU-related load balancing approaches to make the generation and propagation of photons on GPU more efficient.
  - **Lines of code:** 5000+
  - **Github repository**: loizoskoutsantonis/spectsim
- **Formula Optimizer** is a software programmed in Java and JavaFX designed to formulate and solve multi-objective combinatorial optimization problems with no programming expertise. Formula was created based on the premise that it is possible to formulate multi-objective problems easily than state-of-art solvers, with no programming expertise, and solve them with low performance loss. It provides a GUI on which the user formulates its problem. Then, code is generated for jMetal, a well-known framework for metaheuristics in Java. The Formula Optimizer also provides a set of on-line metrics collected during the execution.
  - **Lines of code:** 3000+
  - **Related publication:** Nepomuceno, Pessoa, Nepomuceno (2016).
  - **Repository**: https://bitbucket.org/formulapaper/formulapaper/src/master/