Péricles Lopes Machado

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Birth date: 02/02/1989

About

My formation is in distributed systems, geostatistics and physics simulation. Furthermore, during my undergraduation I participated of three IBM/ACM ICPC national finals (south america/Brazil).

I have a Computer engineering's bachelor degree and a Electric engineering's master degree from UFPA (Universidade Federal do Pará - Federal University of Pará).

Since 2008, I'm working with project and development of GUIs using Qt, distributed programming in C++, algorithm design and compiler development. And, since 2013, I work with Python.

Currently, I'm concluding a phd degree in Computational Geostatistics (Natural Reservoir modelling using computers) at UFRGS (Universidade Federal do Rio Grande do Sul) and I am computer scientist at Ar2Tech.

Some relevant experiences

Computer scientist at Ar2Tech , 2017 - today

AR2GAS and Distributed algorithms for Geostatistics simulation

Currently, I'm developing AR2GAS at Ar2tech, a new geostatics software with support to Distributed Computing and cloud.

Also, I give support to AR2GEMS and develop customized algorithms on demand.

Researcher and PhD student, LPM-UFRGS (Laboratório de Planejamento e pesquisa Mineiro/UFRGS, 2013 - 2017

I worked with development of geostatistical algorithms, AR2GEMS plugins developments and I did contributions to AR2GEMS project, like python plugins support, multi-thread support.

Researcher and MsC student, LANE (Laboratório de Análise Numérica em Eletromagnetismo)/UFPA, 2008 - 2012

LANE SAGS - Simulator for grounding analysis

I worked with improvement and support. I developed a new QT4 GUI and I trained new users.

During this project, I learned many concepts about distributed systems (MPI), openMP, pthreads, QT multi-thread environment, networking programming, C++.

LANE MAXWELL - meshless simulator for electro-magnetics wave propagation

During my master degree, I worked with electro-magnetics wave propagation, using a **meshless** maxwell equation discretization (RPIM - Radial Point Interpolation Method)

This system was developed in C++ and have a QT4 GUI. Currently, this software is a open source project called GoGoRPIM (lanemaxwell).

Open Software Experience

Clever Language - Implementation of multi-thread support and others features (FFI, ncurses, etc.)

I designed and developed the Clever parallellism model. Furthermore, I work in improvement of many features in the language.

The Clever is developed by a member of PHP "core" team, Felipe Pena.

Events and contests

South America/Brazil finalist at ACM ICPC 2008, 2009 and 2010

With the GoGo40 team, I attended three consecutives ACM ICPC south america finals.

Golden medal at SBM/MEC OBMEP 2005 (Brazilian Public School Math Olympiads 2005 promoted by Brazilian Math Society and Education Ministery)

During my high school, I gained a golden medal at OBMEP 2005.

Languages

- Portuguese (**Native language**): understand well, speak well, read well, write well
- English: understand reasonably, speak reasonably, read well, write reasonably

Abilities

Software Development

- Medium level in Python development
- Advanced level in C/C++ development
- Advanced level in parallellism and concurrency (threads, mutexes, semaphores, condition variable, etc.)
- Advanced level in distributed systems
- Programming knowledges in: Python (Medium level), C (Advanced), C++ (Advanced), Javascript (basic level).
- Tools: Git, QMake, CMake, MySQL, Bison, Flex, MPI, Pthread, GRPC etc.
- Platforms: Linux (Debian, Ubuntu), Windows (XP, 7).
- Libraries: GRPC, Qt, Eigen, VTK, pybind11, GMP etc.
- Medium level in physics simulators development

Major Influences

Andrew S. Tanenbaum, Djisktra, Donald Knuth, Richard Bellman, Bjarne Stroustrup

Technical Publications

- Covariance table - A fast automatic spatial continuity mapping, Elsevier
- Analysis of voltages induced on power outlets due to atmospheric discharges on Radio Base Stations, Elsevier
- An automatic methodology for obtaining optimum shape factors for the radial point interpolation method, Journal of Microwaves and Optoelectronics
- A conflict-free, path-level parallelization approach for sequential simulation algorithms, Elsevier, Computers & Geosciences / Elsevier

Projects and links

- github : My personal profile at GitHub
- This Currículo: Repositório
- Currículo Linked-in: Complete CV