HEITOR PASCOAL DE BITTENCOURT

Physicist | Software Engineer

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EXPERIENCE

Python Developer

Itera

📅 Aug 2019 – Present   📍 São Carlos, Brazil

- Back-end development, expansion, and maintenance.
  - REST APIs ● Microservices ● Processing Pipelines ● A.I. infrastructure ● Web back-ends
- System monitoring with Prometheus and Grafana
- Databases: Alfresco ● Cassandra ● ElasticSearch ● AWS S3
- Python Libraries: Numpy ● SciPy ● MatPlotlib ● Tesseract ● scikit-learn ● FastAPI ● requests and more
- Misc: RabbitMQ ● Docker ● Git ● SCRUM ● AWS EC2

Researcher

CERN - Data Preservation and Open Access

📅 Aug 2018 – Dec 2018   📍 Geneva, Switzerland

- Data Mining of Physics' datasets to assemble information about the Physics behind the process
- Categorisation of datasets into hierarchical topic categories
- General portal improvements: documentation, glossary, markdown engine, and user interface
- Python ● Bash ● Git ● Docker ● OpenSource ● Flask ● ROOT ● HPC

Teaching Assistant

São Carlos Institute of Physics, University of São Paulo

- `Feb 2018–Jun 2018`: Introduction to Computational Physics
- `Jul 2017–Dec 2017`: Electronics
- `Feb 2017–Jun 2017`: Introduction to Computational Physics
- `Feb 2012–Jun 2018`: Introduction to Programming in C

Undergraduate Research

São Carlos Institute of Physics, University of São Paulo

📅 Oct 2011 - Feb 2015   📍 São Carlos, Brazil

- `Jan 2013–Feb 2015`: Evolution and visualization of magnetic profile stimulated with adiabatic RF pulses in NMR.
  - Simulation of NMR experiments (C++, CUDA, Python)
  - RF pulse design
- `Oct 2011–Sep 2012`: Anthropometric scanner for fat percentage determination.
  - Graphical User Interface (Qt under Python)
  - Reconstruction algorithms (C++, Cuda)
  - Integration with custom hardware

LANGUAGES

Portuguese Native

English Can read, write, speak, and undestand well

Spanish Intermediate reading, basic speaking/writing

SKILLS

C   C++   Fortran   Python   Bash/Shell   LaTeX   Linux   SSH   Docker   Git   Vim   CI/CD   KiCad   Microcontrollers   OpenSource

EDUCATION

Master's in Physics

São Carlos Institute of Physics, University of São Paulo

📅 Feb 2017 - Present   📍 São Carlos, Brazil

Bachelor in Physics (Exchange)

University of Helsinki

📅 Aug 2015 - Jul 2016   📍 Helsinki, Finland

Bachelor in Physics

São Carlos Institute of Physics, University of São Paulo

📅 Jan 2013 - Jan 2017   📍 São Carlos, Brazil

PATENTS

- PyMR - A Framework For Programming Magnetic Resonance System (Nov 2019)

EXTRACURRICULAR

Conference Organizer

- Caipyra 2019 ● Caipyra 2018 ● Software Freedom Day 2017 - São Carlos

Projects

- `2016-Present` Basic Python course textbook
- `2016` Digital Acquisition System for EPR Spectroscopy