Orlando Mota Pires

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Academic

Feb 2025 - Currently **Visiting student**, *RWTH Aachen university*, Aachen, Germany

Feb 2021 - Currently **Computer Engineering**, *University Senai Cimatec*, Salvador, Brazil
GPA - 8.58/10

Research Experiences

Feb 2025 - Currently **Engineering Intern**, *Fraunhofer IPT*, Aachen, Germany
- Research in the field of high-precision cutting simulation using QAOA (Quantum Approximation Optimization Algorithm) and QA (Quantum Annealing) to enhance simulations performance and quality via the solution of GPP (Graph Partitioning Problem).

Mar 2024 - Dec 2025 **Intern Student**, *QUINN Cimatec*, Salvador, Brazil
- Collaborated with a PhD thesis in the field of Machine Learning focusing on emotion classification models.
- Created a pipeline called FBioT to extract features from a person's face and measure the movement of these features to classify emotions.

Mar 2024 - Dec 2025 **Scientific initiation**, *Senai Cimatec*, Salvador, Brazil
- Research in modeling time series extracted from brain activity with Python and identifying with autocorrelation techniques (such as Detrended Fluctuation Analysis (DFA in short)), pre-ictal or pre-seizure states in epileptic patients.

Jan 2023 - Dec 2023 **Scientific initiation**, *Senai Cimatec HPC Center*, Salvador, Brazil
- Creation of introductory python notebooks for learning basic neural networks and artificial intelligence concepts.
- Executed the algorithms and models developed in a HPC Cluster to benchmark its performance and evaluate portability.

Jul 2022 - Dec 2022 **Scientific initiation**, *Senai Cimatec HPC Center*, Salvador, Brazil
- Participated in research demonstrating the applicability of DPC++ in developing scientific computational codes for academic and industrial applications.

Other Experiences

Sep 2021 - Dec 2025 **Co-founder of Programming Club Student Initiative**, *Senai Cimatec*, Salvador, Brazil
- Some friends and I started this student initiative to teach computer logic to students in Computer Engineering and other courses.
- We also organized competitive programming marathons and events.

Sep 2025 **Summer School Participant**, *Jülich Supercomputing Centre (JSC)*, Jülich, Germany
- The summer school focused on hands-on experience in the development and implementation of algorithms on gate-based devices and quantum annealing.
- Solving classical problems of the quantum computing word, such as the max cut and salesman problem.

Mar 2023 - Dec 2023 **Intel Student ambassador**, *Senai Cimatec*, Salvador, Brazil
- As an Intel Student Ambassador, I leveraged Intel technologies within the university through workshops to enhance students understanding and use of advanced tools such as OneAPI and OpenVINO.

Feb 2022 - Dec 2022 **Academic monitor**, *Senai Cimatec*, Salvador, Brazil
- Monitor of Algorithms and Computational Thinking disciplines. Helped the disciplines' professor evaluate activities, exams, and also taught parallel classes.

Publications

- **Facial Biosignals Time-Series Dataset (FBioT): A Visual-Temporal Facial Expression Recognition (VT-FER) Approach**
  João Marcelo Silva Souza, Caroline da Silva Morais Alves, Jés de Jesus Fiais Cerqueira, Wagner Luiz Alves de Oliveira, Orlando Mota Pires, Naiara Silva Bonfim dos Santos, Andre Brasil Vieira Wyzykowski, Oberdan Rocha Pinheiro, Daniel Gomes de Almeida Filho, Marcelo Oliveira da Silva and Josiane Dantas Viana Barbosa
  Electronics 2024, 13(24), 4867; https://doi.org/10.3390/electronics13244867
- **Tuning a CPU-Based Stencil computation in a DPC++ Multi-Device Environment**
  CONCEIÇÃO, T.; RODRIGUES, A.H, PIRES, O., SOARES, L. Tuning a CPU-Computation in a DPC++ Multi-Device Environment.
  Journal of Bioengineering, Technologies and Health, v. 10, p. 1-13, 2018.
- **OneAPI: an Approach for Developer-Centered Heterogeneous Computing**
  CONCEIÇÃO, T.; RODRIGUES, A.H, PIRES, O., SOARES, L.OneAPI: an Developer-CenteredApproach for Heterogeneous Computing.
  WSCAD22, v.10, p. 1-13, 2018.

Languages

Portuguese	Native
English	Fluent
German	Conversational

Hobbies and interests

I take great pleasure in a variety of activities, including playing chess, engaging in video games, reading a diverse range of books, watching my soccer team play, and maintaining a regular exercise routine.