

# Orlando Mota Pires

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## ACADEMIC

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- Degree in Computer Engineering at SENAI/CIMATEC **2021 - 2025**
- High school at Colégio Cândido Portinari, Salvador, BA **2014 - 2020**

## EXPERIENCE

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### Academic monitor

#### *Academic monitor at Senai CIMATEC*

**Period:** February 2022 - December 2022

**Description:** Monitor of the Algorithms and computational thinking disciplines at Senai Cimatec, helping all students who were starting the Computer Engineering course and providing them with all the help they needed so they could develop.

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### Programming Club

#### *Vice President of the Senai CIMATEC Programming Club*

**Period:** September 2021 - December 2023

**Description:** In the Programming Club, my responsibilities included teaching algorithms and computer logic to students from computer engineering and other courses. I organized competitive programming marathons like OBI and SBC, as well as managed the organization and maintenance of the Student Initiative.

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### Scientific initiation

#### *Scientific initiation at Senai CIMATEC in the HPC Center.*

**Period:** July 2022 - December 2022

**Objective:** Demonstrate the applicability of the DPC++ language in the development of scientific computational codes in academic and industrial contexts.

**Description:** This work focused on studying parallelism concepts, including memory sharing types and structures for parallel algorithms. It involved practical experience with a supercomputer for remote heavy operations. Additionally, performance analyses of Intel® Advisor highlighted limitations in the RTM code for diverse devices. Future research could explore larger workloads, aiming to fully utilize GPU and main memory. **(The final paper can be found on the publication 1.)**

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## Scientific initiation

**Scientific initiation at Senai CIMATEC in the HPC Center.**

**Period:** January 2023 - December 2023

**Objective:** Creation of introductory python notebooks for learning basic neural networks and artificial intelligence concepts. **[Project Github Repository Link](#)**

**Description:** During the course of the project, it was possible to have access to several concepts related to Artificial Intelligence and how neural networks capable of making predictions can be developed in practice. It was also possible to elucidate several technologies that are currently extremely used in AI. The final objective of developing guided learning material for students has not yet been completed, however, it is already possible to notice how great this material is and how much it can help the various people who have access to it.

## KNOWLEDGES

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### Programming Skills

- C++, Python
- Git/Github, Docker, Linux
- DPCPP, CUDA, SYCL, openMPI, HPC and parallel programming

### Other skills

Basic notion of quantum mechanics, qubits and quantum information theory.

### Languages

- **Portuguese** - *Fluent*
- **English** - *Advanced*
- **German** - *Beginner*

## PUBLICATIONS

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### 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.

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### OneAPI: an Approach for Developer-Centered Heterogeneous Computing

CONCEIÇÃO, T.; RODRIGUES, A.H, PIRES, O., SOARES, L. OneAPI: an Developer-Centered Approach for Heterogeneous Computing. WSCAD22, v.10, p. 1-13, 2018.