Caio Alves Fiorotti

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Professional Summary

Undergraduate in Computer Engineering with solid experience in research, software development and integration of robotic systems aimed at rehabilitation. Strong performance in projects with Python, C, embedded communication, genetic algorithms and machine learning. Seek to apply my knowledge in interdisciplinary challenges involving data, artificial intelligence and computer graphics.

Education

- **Federal University of Espírito Santo (UFES)** — Vitoria, Brazil
  Undergraduate in Computer Engineering — Jun 2021 – Present
  GPA: 9.46

- **Federal Institute of Espírito Santo (IFES)** — Vitoria, Brazil
  Civil Technician — Feb 2017 – Feb 2021
  GPA: 88.8

- **CCAA** — Vitoria, Brazil
  English Proficiency Course — Jun 2011 – Jun 2018
  GPA: 84.28

Languages (Speaking, Listening, Writing and Reading)

- Portuguese (fluent, fluent, fluent, fluent)
- English (good, great, good, great)

Professional Experience

- **Symbios Assistive Technologies** — **Vitória, Brazil**
  Software Development Intern — Sep 2024 – Present
  - Developed **WebSocket** control system for upper-limb exoskeleton (post-stroke rehabilitation)
  - Created interactive GUIs using **PyQt** for sensor-actuator integration
  - Implemented **Firebase** database for data storage and synchronization
  - Built custom **SDK** for serial communication with microcontrollers
  - Designed serious games in **Pygame** for patient engagement (clinically validated)

Research Experience

- **Robotics and Biomechanics Lab** — **Vitória, Brazil**
  Undergraduate Researcher — Aug 2023 – Aug 2024
  - Developed **immersive VR environment** (Unity/C#) for robotic prosthesis training
  - Implemented embedded **C firmware** for volitional control systems
  - Processed real-time **EMG signals** for biofeedback applications
  - Integrated sensors for **phantom limb pain** therapy protocols

- **Robotics and Biomechanics Lab**   **Vitória, Brazil**
  Bachelor's Thesis Project   Apr 2025 – Present
  - Designed optimization framework using **Genetic Algorithms** (Python)
  - Developed embedded **C firmware** for real-time prosthesis control
  - Implemented **EMG signal processing** for control decisions

Academic Activities

- **PET Computer Engineering Program**   **Vitória, Brazil**
  Research, Teaching and Outreach Group   Dec 2021 – Jul 2023
  - Conducted **undergraduate tutoring** and workshops on algorithms and programming
  - Developed educational materials and short courses on **programming languages** and **game development**
  - Participated in **community outreach** programs promoting computer science education

- **Introcomp (Staff)**   **Vitória, Brazil**
  Outreach Project   Jan 2022 – Dec 2022
  - Taught introductory **Python programming** courses for public high school students
  - Enhanced skills in teamwork, communication, **data analysis**, and web development

- **Topcom (Staff)**   **Vitória, Brazil**
  Outreach Project   Jan 2022 – Aug 2023
  - Organized Espírito Santo's largest programming competition for high school and college students
  - Contributed to **BOCA platform** development, sponsor management, content creation, and event website

- **SBC Programming Marathon (Staff)**   **Vitória, Brazil**
  Outreach Project   Aug 2022 – Oct 2023
  - Supported preparation of **SBC Programming Marathon** hosted at UFES
  - Managed logistics, sponsor relations, and event website maintenance

- **PET Game Jam (Staff)**   **Vitória, Brazil**
  Outreach Project   Mar 2022 – Jun 2022
  - Organized national **game development** competition using **JavaScript (Phaser 3)**
  - Created educational content (video lessons, slides), contacted sponsors, and evaluated participant code

- **Open Doors CT Event (Staff)**   **Vitória, Brazil**
  Outreach Project   Oct 2022 – Nov 2022
  - Event promoting UFES courses to high school and technical students statewide
  - Developed **back-end** event registration system using **TypeScript** and **NestJS**

Certifications and Awards

- **2024**: Scientific Initiation Program - Robotics and Biomechanics Laboratory/ UFES

- **2024**: Certificate of participation - Topcom 21/ UFES

- **2023**: Certificate of participation - PET Computer Engineering/ UFES

- **2023**: Certificate of organization - Topcom 20/ UFES

- **2022**: Certificate of organization - Topcom 19/ UFES

- **2022**: Certificate of organization - Introcomp/ UFES

- **2022**: Certificate of organization - SBC Marathon Regional Stage/ UFES

- **2022**: Certificate of organization - PET Game Jam/ UFES
- **2022**: Certificate of organization - CT Open Doors/ UFES
- **2021**: Civil Technician Diploma - IFES
- **2018**: Certificate of conclusion - CCAA

Technical Skills

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, SQL

Technologies and Tools: Websocket, Firebase, PyQt, Unity, Pygame, OpenGL, Matlab, Docker, Git, Linux, Kafka, Power BI, Office

Web Development: React, Next.js, React Native, NestJS, Node.js

Machine Learning: Pytorch, Scikit-learn, Numpy, OpenCV, Genetic Algorithm

Soft Skills: Teamwork, Leadership, Scrum, Trello, Figma