Edgard de Paiva Melo Filho

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Summary

Computer Engineering student with a passion for engineering, development, and problem-solving. Experienced in providing project automation support, troubleshooting, and the development of custom macros and scripts in complex engineering environments. Able to quickly adapt to new tools and technologies while supporting multi-disciplinary engineering projects.

Work Experience

Hatch Engineering Consulting — PAT Support Team (Intern) **Feb 2024 – Present**

- Provide comprehensive support to the engineering department by troubleshooting, training, and developing improvements, macros, and scripts for various modeling and project control tools.
- Utilize extensive experience with Bentley software (MicroStation, BRCM, OpenPlant, OpenBuilding, OpenRoads, LumenRT, ProjectWise), Autodesk solutions (Revit, Civil 3D, Recap, Navisworks, AutoCAD Construction Cloud, AutoCAD), and Hexagon tools (Smart3D, SmartP&ID).
- Collaborate with the South American (SAM) group across Brazil, Chile, Colombia, and Peru to support critical engineering projects in the oil and mining sectors.
- Enhance team productivity through rapid skill acquisition and effective troubleshooting practices.

3D Cure — Production Assistant / Shipping Coordinator **[Mar 2023 - Jan 2024 · 11 mos]**

- Managed shipping logistics and performed production support for 3D printing resins.
- Assisted in modeling using blender and sourcing .stl files for marketing and testing.
- Assisted in ensuring quality control and efficiency during production processes.

Freelance — Aircraft Maintenance Technician **(Contract-Based, Approx. 6 Years)**

- Performed maintenance tasks in strict accordance with manufacturer standards and technical manuals, emphasizing accurate interpretation of documentation.
- Conducted regular inspections and diagnostics to identify potential issues using advanced diagnostic tools and specialized technical expertise.
- Executed scheduled preventive maintenance to ensure the integrity and optimal performance of all aircraft systems.
- Repaired or replaced damaged components following established procedures and utilizing appropriate tools.
- Maintained various aircraft systems, including engines, electrical, hydraulic, and navigation systems.
- Provided on-site maintenance and repair services in remote locations, including support during flight operations.

Brazilian Airforce (FAB) — Civil Trainee in Aircraft Maintenance **(Internship, Approx. 1 Year)**

- Performed basic structural maintenance following the guidelines, performed painting on models Embraer A-29A, Cessna C-28 e Embraer T-27.
- Repaired or replaced damaged components following established procedures and utilizing appropriate tools.

Education

Escola Politécnica de Minas Gerais (POLIMIG) **Jan 2011 – Jul 2013**
Aircraft Maintenance Technician

- Learned about aircraft mechanics, maintenance practices and basic hands on practice.
- Studies on structural, avionics, APS(aircraft propulsion system) and APU(aircraft power unit).

Pontifícia Universidade Católica de Minas Gerais **Jan 2016 – Jan 2019**
Bachelor of Mechanical Engineering (Mechatronics Specialization) — Incomplete

- Mentored peers in Calculus I and II.
- Was doing specialization in Mechatronics, leading to some basic projects using microprocessors (using RaspberryPi, Esp32 and Arduino).

Pontifícia Universidade Católica de Minas Gerais **Jan 2023 – Present**
Bachelor of Computer Engineering

- Engaged in a scientific study for AutoML in the medical field.
- Engaged in projects and coursework focused on software development, systems engineering, and emerging technologies.
- More integration with IOT and embedded concept systems (using RaspberryPi, Esp32 and Arduino for prototyping).

Research & Projects

GAIA-ML: An Automated Pipeline for Algorithm Selection and Hyperparameter Optimization in Genetic Algorithms Ongoing

- Study about machine learning for medical classification and the concept of AutoML
- Study about different algorithms and how the hyperparameters settings might affect the resulting model (SVM (linear, poly, and kernel), KNN, Random Forest, Neural network))
- Co-developing an automated pipeline to enhance genetic algorithm performance through optimal algorithm selection and hyperparameter tuning.
- Exploring machine learning techniques within cloud environments (Azure and Google Cloud) as part of experimental tests.

Certifications

- INTERGRAPH SMART P&ID SETUP AND CUSTOMIZATION (TSPL1001)
- SMARTPLANT INSTRUMENTATION INSTALLATION AND SYSTEM ADMINISTRATION (TINT1003)
- SMARTPLANT FOUNDATION DOCUMENT MANAGEMENT CONFIGURATION AND ADMINISTRATION (TSPF3000E)
- INTERGRAPH SMART 3D SETUP & ADMINISTRATION (TSMP3001)

Technical Skills

- **Programming:** Python, C, C++, C#.Net, Java, Assembly, SQL
- **Software & Tools:** Bentley MicroStation, Autodesk (Revit, Civil 3D, Navisworks, AutoCAD), Hexagon (Smart3D, SmartP&ID), Blender, AccuRig, Cheat Engine (ethical, offline use for assembly exploration)
- **Machine Learning:** Basic concepts with hands-on tests in Azure and Google Cloud environments
- **Automation & Scripting:** Development of macros, scripts, and add-in tools for engineering applications

Additional Experience & Mentorship

- Mentored peers in Calculus I and II during Mechanical Engineering studies.
- Developed and maintained assembly code scripts to explore cybersecurity challenges and techniques.
- Explored low-level system manipulation using Cheat Engine/R2(Radare2)/Pwndbg and GEF in ethical, offline, single-player environments to deepen understanding of assembly and memory management.
- Assisted in 2D/3D modeling and rigging projects for digital avatar creation using Blender and AccuRig.
- Currently enrolled in a cybersecurity course on the Alura Platform, expanding practical knowledge in security best practices and ethical hacking and protection.

Languages

- Portuguese (Fluent), English (Fluent), Spanish (Intermediate), Italian (Basic)