Vitor Hugo Gonçalves

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Qualifications Summary

Dynamic and innovative leader with demonstrated ability to analyze business requirements and create effective engineering solutions applicable to diverse industries. Excellent communicator with extensive technical and analytical experience focused on building strong rapport and team-working skills. Maximizes individual productivity as well as cultivating cohesive team environments. Well adept to manage projects and see technology deployment through to successful completion on time and within budget.

Leadership & Management

- Orchestrated events for up to 100 people with oversight of budgets and marketing.
- Managed a budget of $60,000 for a CS Department, growing the school's tech peripherals and education.
- Led scrum meetings with team of seven to assist with cross-functional projects and report progress.

Problem-Solving

- Corrected positioning of falling inverted pendulum on a cart with adjustments to cart's horizontal velocity with developed PID controller using LabVIEW.
- Calculated Doppler shift in the arms of the Milky Way Galaxy with constructed aluminum square-pyramid radio telescope measuring the 21 cm hydrogen band.

Interpersonal Skills

- Led cross-functional teams through several research projects through various internships and classes.
- Cultivated positive morale and cohesive environments for student as the Computer Science Department Head.

Computer Skills

- Wrote a Python auto grader that connects to the Codewars API and Google Drive to automatically grade and give feedback on students' work, using pandas & Git.
- Constructed an Inverted Pendulum control system using an Altera DE2 Board, Verilog HDL, and LabVIEW

Technical Proficiencies

Platforms:	Python, C++, Verilog HDL, MATLAB, SQL, DAX, PowerBI Business Analytics, Linux OS (Debian), Arduino software and hardware
Tools:	Maple, Autodesk Inventor, SolidWorks, Cadence Circuit Design.
Hardware:	3D Printing, CNC Machining, Soldering, Electron Beam Microscope Imaging

Professional Experience

University School of Nashville, Nashville, TN **08/2021 – Present**
Computer Science Department Head

Taught Introductory-Intermediate Courses on Python, Robotics, and Algorithmic Design. Teaches tools such as Git, Pandas, and Django. Runs a schoolwide makerspace dedicated to teaching students on 3D parametric design, electronics, and other engineering principles.

Led students to learn Data Science principles. Coached some of these students to compete in various Google Kaggle Competitions. In this course I teach Data Structures and version control, using Git and Docker to create lessons in virtual containers.

Spearheaded a new course partnered with U Chicago and Vanderbilt combining Literature and Videogames. Was awarded a grant of $50,000 to cultivate and teach other educators across the nation about the course.

Coached and sponsored: a Competition Vex Robotics Team, a Model Rocketry Club, and an AI Club. Also coached students to participate in Carnegie Mellon's picoCTF cybersecurity competition, where students placed in the top 100 places in their bracket.

Teamed up with various Vanderbilt Labs to support USN students interning at these labs. Internship topics include using Seurat to analyze single-cell RNA sequenced data, and performing data science on astronomical data from large telescopes.

MSBN – Minestério Semeadores de Boas Novas, Nashville, TN **04/2021 – Present**
Live Sound Engineer & Media Lead

Manages the live sound of a concert and event space using the Behringer X32 rack. Leads a team of 5 controlling the livestream, lights, video projection, and translation of the event. Have led and managed sound for over 150+ events during this time.

National Federation of Independent Business, Nashville, TN **11/2017 – 03/2019**
Data Science Intern

Transformed large amounts of data into a user-friendly database utilizing DAX and SQL database language for thousands of businesses. Collaborated with cross-functional teams to execute projects focused in agile-run environments with use of Power BI and Azure Analysis services. Composed documentation for dashboards and provided progress reports during scrum meetings with team members.

- Developed seven business intelligence dashboards utilized by company's sales team.

Vanderbilt University, Nashville, TN **06/2014 – 08/2014**
Research Intern

Spearheaded data analysis under direction of Dr. Kyle Conroy and Dr. Keivan Stassun at the Vanderbilt REHSS program. Synthesized data in Python taken from the Kepler Space Telescope focused on determining precise eclipse times based on observations of binary stars and their photometric flux.

Additional Experience

***Teaching Assistant*, Trevecca Nazarene University**, Nashville, TN, 08/2019 – 03/2020
***Resident Assistant*, Trevecca Nazarene University**, Nashville, TN, 08/2017 – 05/2019
***Sales Development Representative*, Sizzle**, Nashville, TN, 06/2016 – 08/2016

Education

Bachelor of Science in Pure Mathematics and Physics, Trevecca Nazarene University, Nashville, TN, 05/2021
Undergraduate Research Projects:

Inverted Pendulum, 02/2017 – 05/2017
- Designed and developed an inverted pendulum with controls on an Altera DE2 board using Verilog HDL.
- Corrected positioning of falling inverted pendulum on cart with adjustments to cart's horizontal velocity by engineering a PID controller with LabVIEW.

Radio Astronomy, 10/2017 – 12/2017
- Assisted in construction of aluminum square-pyramid radio telescope focused on calculating Doppler shift in arms of the milky way galaxy by measuring the 21cm hydrogen band with Airspy SDR.

NMR Spectroscopy, 02/2018 – 04/2018
- Measured spin echo of multiple materials with NMR machine utilizing LabVIEW.

Modeling the Magnetosphere, 06/2019 – 08/2019
- Aided in analyzing data in Python that as obtained from a model of Earth's magnetosphere in FORTRAN with simulated charged particles around the Earth's atmosphere.

Robotics, 08/2019 – 12/2019
- Engineered and modeled robots using 3D printing for parts, soldering for electronics, SOLIDWORKS for design, and Cadence and PSPICE for designing circuit boards for a controller and Arduino shield.

VoxCAD – Soft Robotic Modeling, 11/2019 – 03/2020
- Modeled soft vegetation growth while manipulating several variables including sunlight, energy consumption, and crowding issues.
- Cultivated independent branch of Voxelyze using Git and Visual Studio to execute research in C++.