Daniel Vieira

Control System Engineer

about me

Hi, I'm Daniel! I am a control systems engineer with over 10 years of experience in aerospace industry working with control, guidance, navigation, Model Based Design using Matlab/Simulink and I have solid programming skills in C/C++/Python for embedded systems. I am passionate about innovative engineering solutions and thrive in dynamic environments surrounded by enthusiastic individuals.

personal

Daniel Vieira
Brazil
1985

skills

Control System • Model Based Design • System Engineering • Software Design

programming

Matlab/Simulink • Python • C/C++ • C\# • Typescript • Git • Linux

engineering

Control Theory • Flight Dynamics • Orbital Mechanics • Model Based Design • Hardware in The Loop • Data Analysis • Mathematical Modeling

hobbies

Cycling • Running • Animes • Paragliding • Things that fly

languages

Portuguese: **mother tongue**
English: ● ● ● ○
French: ● ○ ○ ○

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work experience

ICT Group, Software Designer

(2021 - current), (Eindhoven, NETHERLANDS)

- Designed software for the high-tech industry, primarily embedded software developed in C++, Python and C#
- Implemented MBT (Model Based Testing) in Thermofisher, this was integrated in the test pipelines and CI/CD for better software quality.
- Collaborated with various teams to understand system requirements, enabling accurate model descriptions and tests reflective of real system behavior.

AVIBRAS, Product development Engineer

(2012 - 2021), (São José dos Campos, BRAZIL)

- Responsible for the design of the guidance and control system for the Brazilian guided rocket.
- Interfaced with structure and aerodynamics teams to develop a non-linear simulation in MATLAB/SIMULINK to validate performance analysis and control law design testing.
- Aided in procurement of GNC sensors & actuators, ensuring alignment with project specifications and performance constraints.
- Assisted Integration teams in Verification & Validation processes for subsystems using Hardware in the Loop (HIL) and SIMULINK simulations to emulate flight scenarios.
- Undertook the role of a field engineer during product development campaigns, focusing on mission planning, flight performance analysis, data reduction, and analysis.
- Created a Python tool that encapsulates a mathematical model initially developed in Matlab/Simulink, transpiled to C++ code, and then compiled into a Python library for easy non-linear simulations and analysis. This tool is designed for easy distribution to other users, facilitating widespread use and collaboration.

INSTITUTE OF AERONAUTIC AND SPACE, Researcher

(2011 - 2012), (São José dos Campos, BRAZIL)

- Worked as a researcher at the Institute of Aeronautics and Space, focusing on the Satellite Launch Vehicle.
- Developed an attitude controller for a spinning second-stage vehicle to engage trajectory using ON-OFF actuators.
- Created digital models for integration into Hardware In The Loop (HIL) simulations of the launcher.

education

Aeronautics Institute of Technology – ITA

(2019 - Current), (São José dos Campos, BRAZIL)

Ph.D.: Systems and Control Engineering

Robust Control of Linear Systems with Switched Actuators Subjected to Dwell-Time Constraints

National Institute for Space Research - INPE

(2012 - 2015), (São José dos Campos, BRAZIL)

Master: Space Mechanics and Control

Attitude Control of a Vehicle at High Rotation Speed on a Torque-Free environment

Federal University of Uberlândia - UFU

(2004 - 2010), (Uberlândia, BRAZIL)

Bachelor: Mechatronic Engineering

Mapping and Automation of Topograph Surfaces using 2d Coordinate System