Daniel Ospina

Mechanical Engineering Student

Driven by continuous learning focused on applications that blend engineering with new technologies, I have been drawn to research and education. Thanks to this approach, I have acquired technical skills in the use of computer-aided engineering tools as well as various programming languages. Currently, I am seeking opportunities to refine both my technical and interpersonal skills in the academic field.

Contact

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https://www.linkedin.com/in/danielospajoy/

GitHub
https://github.com/daniosp/

Skills

- Python
- MatLab
- C#
- Git & GitHub version control
- Unity 3D
- Arduino
- LaTeX

Certificates

- Cambridge First Certificate in English (FCE) - Level C1
- Certified SOLIDWORKS Associate in Mechanical Design
- Certified SOLIDWORKS Associate in Simulation

Experience

January 2024 - Ongoing
Universidad EAFIT

Research Assistant - Computer Aided Engineering

- Acquisition of skills in the C# programming language, specifically for its application within the Unity 3D game engine, aimed at developing graphical applications simulating an industrial production line.

July 2022 - January 2023
Universidad EAFIT

Teaching Assistant - Introduction to CAD/CAM Systems

- Aided students in the course by conducting weekly study workshops covering topics such as geometric functions, parametric surfaces, and geometric modeling.
- Computed workshop solutions using MatLab scripts. Workshops focused on problem-solving related to rigid and non-rigid transformations, inverse kinematics, image recovery via triangulation and interpolation using various parametric curve types.

February 2021 - December 2021
Universidad EAFIT

Teaching Assistant - Statics

- Devoted 10 hours per week to provide support to students in the course through conducting study sessions aimed at resolving exercises either proposed during class or from the course textbook.
- Used MS PowerPoint to generate drawings depicting the mathematical problems and to incorporate equations using the MathType add-in.
- Utilized MS Excel to implement an iterative method for computing the solution of a 2D cable problem to solve for the cable's length and the tension experienced at its two support points.

Projects

Finite Element Analysis of a Workshop Crane

- Conducted stress measurements at a specific point on the boom of an SC1000A telescopic workshop crane using a strain gauge rosette.
- Modeled the crane in 3D using SolidWorks and conducted stress simulations under a 200 kg load using the Finite Element Method. These results were later compared with the real-world measurements.

Tutorial Blog of an Acoustic Simulation Tool

- Created an educational blog using Hugo as the static site generator and HTML Markdown language for content. The website was deployed using Netlify.
- Conducted basic acoustic simulations employing open-source software such as GMSH and ParaView for pre- and post-processing tasks.