JUAN IGNACIO DOVAL ROQUE

(+44) 07832600003 | **juandovalroque@gmail.com** | **Cambridgeshire CB1 2QP**

WORK EXPERIENCE

Ansys, Cambridge, UK **September 2024-2025**
Work Experience – Academic Development Team

Project Lead: Healthcare Academic App

» Developed interactive, user-defined variable-based applications with automated geometries and simulations using Ansys Discovery, Fluent and PyAnsys, leveraging models I created within healthcare.
» Currently being tested across 10 UK/Europe World Recognized Universities.
» Integrated built-in calculators for comparing analytical models with simulation results, providing tables, graphs, and post processing plotters for visualizing educational data collected from simulations.

Content Creation/Development: CFD Models

» Designed and parameterized 3 Cardiovascular and 1 Respiratory model/s by creating CAD geometries using Python, PyAnsys Geometry, Ansys Discovery built-in editor and automizing simulation workflow with the use of PyFluent to incorporate them into the Healthcare teaching App.
» Created a step-by-step Tutorial for non-Newtonian blood flow of a Stenosed Carotid Artery with the use of Ansys Discovery for CAD creation and Fluent for CFD simulations. Presented at Aston University's Ansys Webinar.
» Created a 4-digit NACA airfoil + wing generator/script within Ansys discovery allowing inputs such 4-digits (NACA), wing span, sweep angle, dihedral, etc. This project will be made into an extension within Ansys Discovery for both sub- and supercritical studies.

Curriculum Mapping Automation

» Developed a Python-based website to automate curriculum mapping for healthcare education by web scraping course units from University's websites.

Learning and Training

» Dedicated over +52 hours to studying courses within the innovation space for Edupack, Ansys Discovery, and Ansys Fluent.
» Currently Learning Opti Slang to perform a sensitivity analysis and optimization for the Spacer to find ideal dimensions to achieve effective drug delivery to the lower respiratory system.

ATG Airports, Warrington, UK **Summer 2022**
Intern

» Facilitated manufacturing and evaluating the airfield fixtures and CCRs with the collaboration of the specialized manufacturers of the company.
» Supervised the already existing methods used by the company and provided a report with improved techniques and routines.
» Produced a detailed comparison between 9 main competitors and ATG for each product to recognize the strengths and weaknesses within the range of products designed by the manufacturer.

EDUCATION

MEng University of Manchester, Aerospace Engineering **September 2020-2026**
Predicted Grade: 68.33% (2.1)
Current Dissertation: Micromechanics of Natural-Synthetic fiber-hybrid reinforced polymers composites laminae (Materials, MATLAB, ABAQUS, Python, PPT, Word)

- » Achieved Second Prize in Poster Desing for the dissertation in Aerospace Engineering, during Dissertation Fair Presentation, March 2024.
- » Presented my dissertation to the industry board of Aerospace Engineering of UoM.
- » Achieved prize-winning group satellite design as sustainability and manufacturing engineer.
- » Designated Manufacturing and Sustainability Engineer for 3rd year project, for Space Debris Identification Mission.
  - » Developed a report about an aircraft's mission considering drawings, diagrams such as payload range and flight constraints, weight, and balance, landing gear and market analysis using MATLAB and SOLIDWORKS.
  - » Actively using MATLAB/Excel to process larger calculations effectively to graphically demonstrated findings.

HS Institutos Educacionales Asociados (IEA) **September 2014-2019**
GPA: 17/20

RELEVANT EXPERIENCE

Flight Sim Society **September 2023-Present**
Design Engineer
- » Achieved first prize at IT FLIES USA 2024; Designed 'Phantom 1', detail-oriented optimization of fighter jets Sukhoi Su-57 and Eurofighter Typhoon with the use of SOLIDWORKS, CFD and MATLAB.

UAV Society **June 2023-Present**
Assembly and Testing Engineer
- » Assembled and tested a quadcopter using Ardupilot to configure the motors in a group of 4.
- » Designed, Assembled, and launched a prototype rocket utilizing OpenRocket as the software of choice for design. Configured a set of sensors, altimeter and accelerometer using Arduino IC. The project was completed in a group of 5.
- » Assembled and tested of a fixed-wing, rotor-propelled unmanned aerial vehicle called The Albatross. Assemblance and testing was completed within a group of 6.

Manchester Stinger Motorsport **September 2022-Present**
Vehicle Dynamic Team
- » Learning Challenge: Re-designed of the brake disc used in previous models of the car, with the objective of reducing the weight of the disc by 25% in CAD.
- » Learning Challenge: Produced in CAD the rear anti-roll bar.
- » Responsibility: Collected data from tire manufacturers and produced a study utilizing MATLAB and Excel to acquire a suitable set for the vehicle.

LANGUAGES

English: Proficient Listener, Speaker, Reader, and Writer.
Spanish: Native speaker.

SKILLS

Programming: Proficient at MATLAB, Python, PyAnsys (PyAnsys Geometry, PyFluent, Discovery Built-in Editor, Plotly Dash WebApp). Amateur in Django and Astro.
Platforms & Applications:
- » **Proficient** in Ansys Discovery (CAD and Fluids), SOLIDWORKS (CAD & 2D Drawing), Fusion 360 (CAD), Ansys Fluent (CFD), XFLR5, GMAT, Microsoft Excel and Microsoft Powerpoint
- » **Intermediate** at LabView (DAQ), ABAQUS (FEA), Ardupilot.
- » **Amateur** in Ansys Edupack and ANSYS LS Dyna

Manufacturing: Experienced in 3D printing, Welding, Milling.