Davide Cannavacciuolo

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Profile

Aeronautical Engineer with over 2 years of working experience and a multidisciplinary background. Specialized in systems modeling and simulation, control law design and hardware/software integration for safety-critical applications. Currently focused on developing advanced electro-mechanical actuator control algorithms and supporting aeronautical certification compliance. Multilingual and internationally adaptable with strong communication skills, and a proven ability to bridge R&D, testing, system design, and validation. Highly motivated to contribute to the development of more efficient and high-performance technological solutions for the aerospace sector and beyond.

Technical Competencies

- **Flight Physics & Structures:** Flight Dynamics, Aerodynamics & CFD, Structural Design & FEM Analysis
- **Control Systems Engineering:** Model-Based Design, Simulation & Control Systems, Electric Motor Control, System Dimensioning & Optimization, Embedded & Real-Time Control, Hardware-in-the-Loop (HIL) Testing
- **Avionics & Compliance:** Avionics Systems, Safety-Critical Systems, Aeronautical Regulatory Compliance (DO-178C, DO-254, ARP-4754A, ARP-4761), Requirements Engineering & Validation, Manufacturing Processes
- **Professional Skills:** Project Management, Technical Documentation & Reporting, System Integration & Validation, Prototype & Acceptance Testing
- **Software & Tools:** Matlab/Simulink, Ansys, STAR-CCM+, SolidWorks, CATIA, Python, C/C++, IBM DOORS, MS Office

Professional Experience

- **Control System Engineering, UmbraGroup, Foligno, 10/2023 – Present**
  In the R&D department, I'm responsible for developing high-fidelity simulation models of electro-mechanical actuators, defining control laws, and integrating hardware/software for safety-critical aeronautical applications. Additionally, I also focus on the design, optimization, and coding of electric motor control algorithms using tools as Matlab, Simulink, Code Composer Studio and C++/Python language. I provide operational support during Acceptance Test Procedures (ATPs) across multiple flight-critical scenarios, using hardware-in-the-loop (HIL) testing platforms to ensure compliance with DO-178C, DO-254, ARP-4754A, and ARP-4761 standards. The role involves also taking part in technical calls with leading international aerospace companies, collaborating across multidisciplinary teams to optimize system efficiency and performance.
- **Requirements and Model-Based Design, Alten Technology, Italy, Milan, 03/2023 – 10/2023**
  I worked on the development of the AW249 Leonardo Helicopter pilot training simulator, modeling and simulating avionic systems, including hydraulics, electrical, power and propulsion, and all minor subsystems. I also contributed to the data transmission of the EDCU (Enhanced Display Control Unit) between the simulation environment and pilot avionics controls, using MATLAB and Simulink. Lastly, using IBM DOORS, I participated in writing high- and low-level requirements for the software data transmission protocol, following the Verification and Validation (V&V) model and DO-178C software development guidelines to ensure compliance with safety-critical standards. The working environment allowed me to learn and collaborate with teams of different technical backgrounds.

Education

- M.Sc. in Aeronautical Engineering, 103/110, University of Pisa – 2021/2024
- B.S.E. in Aerospace Engineering, 95/110, University of Pisa – 2017/2021
- Matlab Workshop: Development, Testing, and Validation of Motor Control Strategies with MATLAB & Simulink, 10/2024
- Modelling Electrical Power Systems and Fluid Systems with Simscape, Matlab Course Certificates, 03/2023
- Turbulence Modelling, Ansys Fluent Learning Hub Certificates, 04/2022

Languages

Italian: Native | English: Fluent | German: Fluent | Spanish: Fluent | Portuguese: Conversational

References and other documents available upon request