Miguel Aresta

Chippenham, SN15 3BT, UK
miguel22areshta@gmail.com • +44 7732822375 • linkedin.com/in/miguel22aresta

EDUCATION

University of Southampton, Southampton, UK

- MSc in Aerodynamics & Computation — Sep 2020 – Sep 2021
  - Thesis: Automatic-Differentiation in Computational Fluid Dynamics
  - Adviser: Prof. Gabriel Weymouth
  - Focus: CFD, Computer Programming, Numerics

University of Nottingham, Nottingham, UK

- BEng in Aerospace Engineering — Sep 2017 – Jul 2020
  - Thesis: A Computational Framework for Aircraft Conceptual and Preliminary Design
  - Adviser: Professor Mark Jabbal
  - Focus: Aircraft Design, Computational Aerodynamics
  - Graduated with First Class Honours

RESEARCH EXPERIENCE

University of Nottingham, Nottingham, UK

- Undergraduate Research Student, Science Department — Nov 2018 – Dec 2019
  - Project: CubeSat hosting a biological experiment - testing the effects cosmic-radiation and microgravity on cancer cells.
    I used my CAE skills to design and build a prototype radiation detector (photo-scintillator) which was completed ahead of schedule.
  - Supervisors: Dr. Chantal Cappelletti
  - Focus: Space Systems Engineering, Space Medicine

PUBLICATIONS

JOURNALS

[1] M. Aresta "An Integrated Computational Framework for Airplane Conceptual and Preliminary Design," *Gagarin Science Conference 2020, Moscow Aviation Institute*, pp. 1666–1667, Feb 2020.

CONFERENCES

[1] M. Aresta and M. Jabbal, "An Integrated Computational Framework for Airplane Conceptual & Preliminary Design ," in *RAeS Applied Aerodynamics Research Conference (Postponed)*, Bristol, UK, Jul 2020.

AWARDS & CERTIFICATES

Flight Laboratory Course, National Flying Laboratory Centre, Cranfield, UK — Mar 2019

F1 in Schools, CITEVE, Portugal

- Research & Development Prize, Team Foxtrot One, F1 in Schools, Portugal — Mar 2019
  - For use of CFD and parametric CAD to optimize our model car.

PROFESSIONAL EXPERIENCE & ACTIVITIES

Marble Aerospace Limited, Chippenham, UK

- Lead Aerospace Engineer — Aug 2021 – Present
- Successfully implemented a physics-based approach to aerodynamic design, improving the company's engineering process by increasing fidelity and lowering uncertainty.
- Tackled all aerodynamics and stability problems and increased collective understanding and best practices on UAV design.
- MRB5 VTOL UAV concept design, CAD framework and aerodynamic layout.
- MRB4 and MRB5 flight-test activities and flight-performance data analysis.
- CAE calculations using in-house (written in C and Python) and commercial codes for multi-physics calculations
- Deployed in Senegal and Costa Rica for BVLOS engineering support, passionately supporting the stackeholders interests.
- Technical content writing for the company's CAA certification for BVLOS operation in the UK.
- CAD Admin for CATIA V5 and responsible for company-wide policies and strategy.

Project Boom, Oklahoma, USA

- Aerodynamics CAD Lead (remote internship)

- Best practices in the usage of Euler solvers, methodology validation for high-speed flows

Jun 2020 – Oct 2020

Unitemps, Nottingham, UK

- Aerospace Student Ambassador 2018 – 20
  - I used my enthuasiasm and knowledge of Aerospace to provide prospective students and parents a comprehensive and insightful presentation of the course as well as facilities at the University of Nottingham.

Royal Aeronautical Society (RAeS), Nottingham, UK

- Nottinghamshire Branch Secretary Mar 2019 – 2004

CAMPUS ACTIVITIES

Faculty of Engineering, University of Nottingham, UK

- Aerospace Course Representative during Year 1 and Year 2 2017 – 2019
  - Managed to get lecturers to work on a common assignment calendar, so as to avoid deadline conflicts. Liaised with my colleagues and the Course Director to reach a common understanding and improve our student experience and course syllabus.

LANGUAGES

- Portuguese: Native language.
- English: Fluent at native level.
- Russian: Intermediate (reading); basic (speaking, writing).
- French: Basic (reading, speaking, writing).
- Spanish: Basic (reading, speaking, writing).

SKILLS

- Computer Aided Design (CAD): CATIA V5 (since 2014), CATIA V6, 3DExperience. Proefficient in 3D surfacing, parametric design, formulas/laws, DFM etc.
- Computational Fluid Dynamics (CFD): Commercial codes (FLUENT, STAR-CCM+); Open Source (SU2, OpenFOAM, etc)
- TEX & LATEX,
- C (programming language) : Proefficient
- Fortran (90 to 2018): Intermediate (knowledge of parallel programming and coarrays)
- C++ : Working knowledge
- Graphics Programming: OpenGL and associated wrappers
- C++: Basic
- Python: Intermediate (very good working knowledge)
- MATLAB
- 3D-printing (SLA, FDM): Proefficient
- UNIX-based systems: Proefficient (desktop); Basic(Server, Cluster/HPC)

INTERESTS

REFERENCES

- **Mathieu Johnsson**
  Marble Aerospace Limited CEO
  mat@marble.aero
- **Professor Mark Jabbal**
  Associate Professor in Aerospace Engineering
  University of Nottingham
  Mark.Jabbal@nottingham.ac.uk
- **Dr Xinhua Wang**
  Assistant Professor
  University of Nottingham
  xinhua.wang1@nottingham.ac.uk

[*CV compiled on 2023-01-09*]