

Marcos Acin

SENIOR AEROSPACE ENGINEER · EXEC. MBA · TEAM LEADER · R&D LEAD · CAE/FEA SIMULATION

United Kingdom

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“The best way to predict the future is to invent it” - Alan Kay

Summary

Senior Aerospace Engineer with a Exec. MBA and 8 year worldwide experience managing R&D, Stress Analysis & FEA projects for top tech companies like NASA and Rolls-Royce. Leading metal and composite structural analysis and design projects teams for Aerospace, Automotive and Renewable Energy sectors. Managing and leading multi-million product development from early R&D to production. Spanish National Award for Excellence.

Work Experience

SuperNode Ltd

Dublin, Ireland

SENIOR STRESS ENGINEER

Dec. 2020 - Present



- Team lead managing and developing R&D engineering projects through TRL phases: from initial concept and requirement specification to industrial solutions.
- Leading new cryogenic composite material characterisation from coupon testing to end product level.
- Managing and integrating suppliers, vendors, academics, contractors and internal clients for project completion.

NASA – AMES RC - Advanced Supercomputing

Silicon Valley, California, USA

STRESS ANALYSIS EXPERT

Aug. 2019 - Present



- Development of thermal protection systems in support of NASA's atmospheric entry missions.
- Heat Shield FEA modelling at high temperatures and hyper-sonic conditions using FEA coupled to other fluid codes.
- Optimizing new materials and their structural and thermal behavior through self-developed FEA & FVM codes.
- Development of C++ and Python FEA codes for assessing structural and thermal response of woven and fibrous materials.

Applus IDIADA – Automotive Crash Safety

Tarragona, Spain

FEA LEAD ENGINEER

May 2017 - July 2019



- Leading vehicle structural simulation design teams for OEMs worldwide (Honda US, Peugeot, Dyson).
- FEM modelling of cars, pedestrians and human dummies using LS-DYNA, RADIOSS and NASTRAN, Excel VBA and scripting.
- Developing strategies to meet different safety requirements for US, EU and China regulations.

Rolls-Royce – Aero-engines Structural Impact Group

Derby, UK

FEA STRESS IMPACT ENGINEER

Oct. 2016 - May 2017



- Leading structural FEA projects related to gas turbines impacts (bird strike, ice slab ingestion, etc.)
- FEA modelling of complete fan engines, structural analysis and optimization using LS-DYNA and bash scripting.
- Liaising with multiple Rolls-Royce teams and departments for a satisfactory and timely project delivery.

Strand7 UK Ltd – Software for Structural Analysis

Cambridge, UK & Sydney, AU

FEA TECHNICAL SUPPORT ENGINEER

July 2014 - Sept. 2016



- Providing FEA technical support and consultancy services to Strand7 users in Europe.
- Delivering 1-week FEA training courses to engineering companies on Strand7 and Structural Analysis.
- Attending engineering shows and conferences exhibiting Strand7 capabilities to customers.
- Liaising with the development team to provide feedback on FEA performance and bench-marking.

Education



Ulster University

Belfast, UK

EXECUTIVE MBA

2020 - 2022

- 2 year part-time programme - Distinction



Cranfield University

Cranfield, UK

MSC IN AEROSPACE VEHICLE DESIGN (STRUCTURAL DESIGN)

2013 - 2014

- Erasmus program – Excellence in Achievement Award.



Polytechnic University of Valencia

Valencia, Spain

MENG IN AERONAUTICAL ENGINEERING

2012 - 2013

- Top 1 Distinction. Airbus Group and Ministry of Education awards for best academic record.



Polytechnic University of Madrid

Madrid, Spain

BSC IN AERONAUTICAL ENGINEERING

2009 - 2012

- Top 5 out of 300.

Skills

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|----------------------------|--|
| Interpersonal | Strong work ethics, decisive and skilled problem solver, able to work independently as a team and leading, strong analytical skills, quick learner, excellent organization skills, ability to communicate at all levels, able to multitask and prioritize efficiently. |
| Languages | Spanish (native), English (proficient – C2), French (basic). |
| Structural Analysis | LS-DYNA, NASTRAN, MADYMO, ANSYS, RADIOSS, STRAND7, ANSA/META, CODE ASTER, HYPERMESH. |
| Programming | EXCEL VBA, PYTHON, MATLAB, BASH/SHELL, C++, MATHEMATICA. |

Honors & Awards

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| 2020 | Excellence in Achievement Award for Recent Aerospace Graduates , Cranfield University | <i>Cranfield, UK</i> |
| 2018 | National Award for Academic Excellence , Spanish Ministry of Education | <i>Madrid, Spain</i> |
| 2017 | Pegasus Award , European Group of Aeronautics and Space for EU multi-national experience and research | <i>Europe Union</i> |
| 2016 | Best academic record in Aeronautical Engineering , Airbus Group | <i>Valencia, Spain</i> |
| 2016 | Academic Excellence , Spanish Ministry of Education | <i>Valencia, Spain</i> |
| 2013 | Erasmus grant , MSc £10.000 fee waiver due to academic performance | <i>Cranfield, UK</i> |
| 2008 | Young entrepreneur finalist award , ILDEFE & Leon city council | <i>Leon, Spain</i> |

Publications

JOURNAL ARTICLES

Anisotropic Analysis of Fibrous and Woven Materials. Part 2: Computation of Effective Conductivity

F. SEMERARO, J. C. FERGUSON, M. ACIN, F. PANERAI, N. MANSOUR

Computational Materials Science, Vol. 186 (Aug. 2020). 2020. DOI: [10.1016/j.commatsci.2020.109956](https://doi.org/10.1016/j.commatsci.2020.109956)

CONFERENCE PROCEEDINGS

Multi-Scale Analysis of Effective Mechanical Properties of Porous 3D Woven Composite Materials

S. FRAILE, S. FEDERICO, M. ACIN

AIAA SCITECH Forum, 2022, San Diego, USA, URL: <https://arc.aiaa.org/doi/10.2514/6.2022-2281>

Courses & Certifications

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| 2020 | Artificial Intelligence: Human - Centered AI Deep Learning and Beyond , Stanford University | <i>Silicon Valley, US</i> |
| 2019 | French Basics - 2 years , Tarragona's language school | <i>Tarragona, Spain</i> |
| 2019 | Madymo - Vehicle Occupant Safety , TASS | <i>The Hague, NL</i> |
| 2016 | Structural Optimization in FE Analysis , NAFEMS | <i>Internet</i> |
| 2015 | Fatigue & Fracture Mechanics in FE Analysis , NAFEMS | <i>Internet</i> |
| 2014 | Introduction to FEA, Nonlinear Analysis and Dynamic Analysis , Strand7 | <i>Sydney, AU</i> |
| 2009 | Certificate in Advanced English (C1) , Cambridge Assessment English, ESOL exams | <i>Leon, Spain</i> |

Industry Led Projects

Computation of Thermal Properties in Fibrous and Woven Mats using CT scans

NASA AMES - SUPERCOMPUTING PROJECT

Silicon Valley, US

Dec, 2019

Occupant Safety CAE development for OEM: ENCAP, CNCAP, IIHS, R14, R15, R16

APPLUS IDIADA - PASSIVE SAFETY PROJECT

Tarragona, Spain

March 2019

Wheel Kinematics test development for IIHS Small Overlap Assessments

APPLUS IDIADA - PASSIVE SAFETY PROJECT

Tarragona, Spain

Jan 2018

Trent XWB 97k - Weight Optimization Assessment with LS-DYNA

ROLLS-ROYCE - PASSIVE SAFETY PROJECT

Derby, UK

Jan 2017

Ultrafan - Composite fan blade assessment due to ice slab impact using LS-DYNA

ROLLS-ROYCE - PASSIVE SAFETY PROJECT

Derby, UK

Jun 2017