Daniel MARGERIT

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Daniel-Margerit
danielmargerit

Research and Modeling Engineer

With 20 years of experience as a consultant in the Aeronautics industry, I have solid expertise in analyzing and modeling the functional requirements of complex systems. With 10 years of research and teaching in fluid mechanics, I have solid expertise in modeling and scientific computing.

Key Skills

- Physical and Mathematical Modeling
- Specification (UML, Archimate) and Formalization
- DoE Methods, MDAO, Data Science, RUP, MBSE
- Development in Python, Matlab, Fortran, C++
- Technical Project Management

Qualities

- Analytical and Creative Mindset
- Rigor and Perseverance
- Adaptability and Communication

Education

PhD Fluid Mechanics 1997
INPL Nancy

Engineering Degree 1993
Fluid and Thermal Mechanics
ENSEM-INPL Nancy

Qualifications

Applied Mathematics 2002
Section 26 CNU

Mechanics 2002
Fluid and Thermal Mechanics
Section 60 CNU

E-Learning

Enterprise Architecture 2024
MBSE 2023
Probability 2018
MOOC Coursera

Languages

French — Native Language
English — Professional

Interests

Scientific Research
Listening to Science Podcasts
Volunteering in Math Associations

Aeronautical Industry Consultant

2004 – Present : **Capgemini** - *Toulouse*

Data Science and Optimization Engineer
- MDAO studies (gemseo, SoSTrades, OpenVSP)
- Design of interface mock-ups and regression with scikit-learn

Business Analyst
- Valorization of research for CIR (6 months)
- Capture and analysis of Airbus Tech Data processes via Archimate
- Requirements documents in UML for the Airbus Digital Stress Dossier project
- UML specifications with Topcased/Papyrus for the Airbus e-logbook project
- Business lead of the Caesam/Python Framework of Airbus's ISAMI tool (6 years)

Occasional Trainer
- Airbus training on *ISAMI Static* and *Metallic Static Strength*

Python and Matlab Developer
- Python in MDAO in the Airbus SoSTrades team (10 months)
- Python on Abaqus, Scilab in fatigue (R-curve) and Matlab in vibratory post-processing
- Aero and mechanical optimization chains under Python with Optimus for Snecma

Structural Engineer
- Airbus structural certification (6 years) and Patran/Nastran simulation on frame 40

Researcher and Teacher

2000 – 2004 : **IMFT & CERFACS** - *Toulouse*

Research Engineer and Trainer
- CFD calculations with Elsa and implementation in C++ and Python
- Development of a 3D simulation software in C (European project CWAKE)
- Trainer at CNAM evening courses on *Numerical Methods in Aerodynamics*

1998 – 2000 : **Mathematics Institute, Warwick University** - *Coventry (UK)*

Post-Doctoral Researcher
- Electro-physiological behavior of the cardiac muscle
- Asymptotic methods with Maple and development of a spectral code in C

1994 – 1998 : **LEMTA** - *Nancy*

Researcher and Teacher
- Dynamics of curved vortex filaments with Fortran, Matlab, and Maple
- Teaching in *Fluid Mechanics* and *Mathematics* at ENSEM Nancy

1993 – 1994 : **Nuclear Studies Center (CENG)** - *Grenoble*

Test Design Engineer
- Modification of a thermal treatment furnace for irradiated uranium pellets