

# Clément Rodrigues

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## EDUCATION

### ICAM

(Institut Catholique d'Arts et Métiers)

**MENG - MECHANICAL & CONTROLS**  
Sep 2011 - Sep 2014 | Toulouse, FR

### UNIVERSITÉ PAUL SABATIER

**DUT - MECHANICAL & AEROSPACE**  
Sep 2009 - Jun 2011 | Toulouse, FR

### LYCÉE VICTOR HUGO

**A LEVELS - SCIENCES**  
Sep 2006 - Jun 2009 | Toulouse, FR

## COURSEWORK

### MASTERS

Applied Mathematics  
Thermodynamics  
Material Properties  
Finite Element Analysis  
Controls  
Industrial Process Optimization  
Project Management

### DUT

(2 year degree)

Aerospace Sciences  
Material and Processes  
Non-destructive Control  
Structural Analysis  
Manufacturing

## SKILLS

### COMPETENCIES

Dynamic Simulation  
Mechanical Design  
Project Management  
Failure Assessment

### SOFTWARE

Engineering:  
Catia • Adams • Abaqus • Matlab  
Programming:  
C • VBA

### LANGUAGES

**French** • Mother tongue  
**English** • Fully Fluent  
**Italian** • Intermediate  
**German** • Beginner

## HOBBIES/INTERESTS

Rugby (13 years playing)  
Diving (Freediver lvl 2 & Scuba diver lvl 1)  
Aerospace  
Traveling

## INDUSTRY EXPERIENCE

### SAFRAN MESSIER-BUGATTI-DOWTY | PERFORMANCE ENGINEER

Oct 2014 – Oct 2016 | V.I.E. Contract | Toronto, ON, Canada

- Carried out Taxi and Dynamic Braking dynamic simulations as part of the Bombardier Global 7000/8000 performance assessment.
- Re-designed the Adams Shimmy model with flexible bodies and insured its fidelity through a modal frequency response analysis and a stiffness study.
- Harmonized performance methods across UK, France and Canada by writing the first Adams model descriptions for North-American aircraft programs.

### AIRBUS | APPRENTICE MECHANICAL ENGINEER

Sep 2011 – Sep 2014 | Toulouse, France

- Performed weight saving and systems optimization studies to meet the A330NEO requirements, which involved modifying flight controls as well as revising existing mechanical systems.
- Modified fuel and hydraulic systems within the A330 center tank by improving electrical continuity in order to avoid any static discharge.
- Implemented electronic flight bags (EFB) for A330, which required the modification of the cockpit layout while taking the pilots requirements into account.

Jun 2012 – Sep 2012 | Filton, United Kingdom

- Designed A320neo mechanical and electrical systems at the wing/fuselage and wing/pylon interfaces.
- Assessed electrical harnesses compliance with regards to engine fire risks.

### AVIO | DESIGN INTERN

Apr 2011 – Jun 2011 | Colleferro, Italy

- Designed and modeled the roll generator for Vega launcher, including the nozzles, pipes and propellant flow optimization.
- Achieved several repairs on Ariane 5 boosters and implemented them while they were in production.

## DESIGN EXPERIENCE

### SPACEX | INDUSTRY ADVISOR FOR RYERSON'S HYPERLOOP TEAM

Aug 2015 – Present | Toronto, ON, Canada

Responsible for design validation and performance analysis of the Hyperloop Deployable Wheel System developed for the Hyperloop Competition.

- Winner of the Subsystem Innovation Award by SpaceX during the competition finals in Texas (124 Universities, more than 1000 students).
- Design patent pending with Messier-Bugatti-Dowty, our main partner.

### ICAM MATERIAL LAB | SCIENTIFIC MEMOIR

Sep 2013 – Feb 2014 | Toulouse, France

Performed corrosion research in support of my Masters' Degree

- Performed a failure assessment on a boiler affected by corrosion to settle a litigation between the manufacturer and the customer.
- Studied corrosion between carbon fiber composite and treated aluminium on behalf of Ratier Figeac, a subsidiary of UTC Aerospace Systems.

### ICAM | HEAD OF R&T FOR THE RESEARCH AND INDUSTRIAL DAY

Apr 2012 – Apr 2013 | Toulouse, France

Managed 26 people during one year in order to organize the Research and Industrial Day, a one day conference about the energy challenge within the embedded systems, involving students, industry professionals and scientists.