# NICOLAS LATRÉMOUILLE, ing. jr

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## SUMMARY

→ Professional, autonomous, rigorous and hard working
→ Static stress analysis using hand calculations and FEA methods, and Fatigue analysis
→ Advanced CAD modeling of large assemblies (500+ parts)
→ Experience in composite manufacturing, machining of metals, CNC programming, and microelectronics
→ Experience in engineering software tool development and task automation

## EDUCATION

**M. Ing. Aerospace, Product Development and Systems Integration Option**
Polytechnique Montréal, 2015, GPA: 3.97/4

**B. Ing. Mechanical, Mechatronics Concentration**
Polytechnique Montréal, 2013, GPA: 3.69/4

## ENGINEERING EXPERIENCE

**Aircraft structures analyst, CF-18 ASIP / ALEX**
L3 MAS, 2017-present

Safe life and damage tolerance analysis for the aircraft structural integrity program and life extension.

Certification of structural repairs: certification plan, FEM editing, and detailed stress analysis.

Fatigue sequence assembly and synchronisation based on fleet usage analysis.

**Flammability Analyst**
Bombardier Aerospace, Global Completion Center, 2015-2017

Analysis of interior completions of business aircraft for certification requirements of FAR 25.853 and 25.856. Authored the flammability test report for the floor covering of the Global 7500 Flight Test Vehicle 5 special airworthiness certificate.

Development of automated tools for the analysis of part cross-sections to find similarity and generate test plans.

Provided risk mitigation advice and flammability testing for Product Change projects for the Global premier cabin.

**Industrial Gas Turbines Engineering Intern**
Rolls-Royce Canada, 2012-2014 (summer)

Requirements verification and validation for a new GT combustion system. Documentation interfaces (ICD). Inspection of striped test engine in coordination with development and material review board.

Improvement of new engine customer pass-off testing and engine operational limits definition process. Design and upgrade of software tools used for the analysis of on-site customer gas turbine performance.

**Control Systems Team Lead**
Polytechnique + Cirque du Soleil, 2012-2013

**Circus prop:** design, procurement and assembly of the control and safety systems. Integration of microelectronics, sensors, software, power circuits, and housings with the mechanical systems of the prop. Fully functional prototype completed on time and within budget of 18 000$ for parts and materials.

**Mechanical Engineering Intern**
Chaire des Composites Hautes Performances, 2011-2012

**Resin injection system:** concepts, detailed design: CAD, structural analysis, bolted assembly sizing, thermal tolerance analysis, quotation requests for custom components, BOM management, and budget tracking.

**Practical work:** CNC cutting of fiber preforms, assembling vacuum bags, molds and injection systems.

**Mechanical Team Member**
Abyss EPM (autonomous underwater vehicle student group), 2010-2011

**ROV thruster:** design, procurement of materials and tooling, and manufacture by lathe and mill.

**Organisation building:** successful solicitations for sponsorships, recruitment activities, and web site design.

## SUMMARY OF ABILITIES

**Languages**
→ Fully fluent and capable of professional writing in English and French

**General computing**
→ Advanced use of Word, Excel, PowerPoint, and Visio; proficient with Outlook and Project
→ Programming: Excel VBA macros, VB.Net, C#, MATLAB

**CAD, VPM & FEA**
→ Advanced use of CATIA V5/V6 including parametric and generative shape modeling, CNC programming
→ Familiar with SolidWorks and PTC Creo Parametric
→ BOM and configuration management in ENOVIA V5
→ FEA in CATIA, ANSYS Workbench & APDL, HyperMesh and PATRAN/NASTRAN

**Project management**
→ Requirements definition, validation and verification
→ Applying industrial practices: WBS, earned value analysis, risk analysis, schedules, and budget

**Control systems**
→ Designing and assembling hardware and software of control systems; programming micro-controllers
→ Modeling systems (e.g. serial robots) and designing control laws

## QUALITIES

→ Self-motivated and dedicated to success
→ Strong technical and analytical skills
→ Highly organised and able to manage competing priorities
→ Able to coordinate information within a large team and form strong relations with colleagues