@ Julian.b.Erskine@gmail.com
+33 XX XX XX XX XX
in www.linkedin.com/in/julian-erskine
66 Avenue du Sequoia, Nantes
Pays-de-la-Loire, FRANCE
Canadian (with French scientific visa)

JULIAN ERSKINE

PhD Student in Robotics, Studying Multi-Agent UAV Systems with a Focus on Decentralized Formation Control

WORK EXPERIENCE & PROJECTS

PhD Student/Researcher

Laboratoire des Sciences du Numérique de Nantes

September 2018 - Present — Nantes, France

Research (See pg. 2 for published work):

- Performed a complete analysis of quadrotor formation singularities
- Created control algorithms for more dynamic quadrotor formations
- Practical collaboration on work relating to UAV-based robots
- Reviewed papers for IEEE and ASME journals and conferences

Other Works:

- Instructed labs (in English and French) on the modelling and control of serial robots and non-linear systems using C++, Matlab and Simulink
- Coordinated the expansion of the LS2N drone fleet and testing arena
- Ran UAV demos for audiences ranging from UAV experts to the public

Research Assistant

Laboratoire des Sciences du Numérique de Nantes

February 2018 - August 2018 — Nantes, France

- Developed a general methodology of modelling the wrench capabilities of reconfigurable quadrotor-based aerial cable-towed systems
- Designed and simulated a non-linear controller for a payload suspended from multiple quadrotors for accurate dynamic trajectory tracking
- Built, programmed, and tested a prototype with three customized drones for experimental validation of controller and wrench analysis
- Presented results at a conference and submitted two journal articles

Miscellanious Smaller Projects

École Centrale de Nantes

September 2016 - December 2017 — Nantes, France

- Workspace mapping, design optimization, and reconfiguration planning for discreetly reconfigurable cable-driven parallel robots
- Optimal kinematic design and placement of serial and parallel robots
- Computer vision, visual odometry, and visual servoing using OpenCV

Engineering Internships and Summer Jobs

ATCO Gas — May - Dec, 2014 — Edmonton AB
Designed and managed over 30 natural gas distribution pipeline projects

Surrette Battery Company — Jan - Apr, 2014 — Springhill NS
Assisted in H&S, product quality, and production improvements

Seven Lakes Development — May - Aug, 2016 — Porters Lake NS
Worked as a chainsaw operator, and as a construction assistant

Big Cove YMCA Camp — Jun - Aug, '11-13,15 — Thorburn NS
Worked various management and counselling rolls at a youth summer camp

EDUCATION

PhD in Robotics (in progress)

École Centrale de Nantes

2018 – 2021 — Nantes, France

Thesis title: *Robust Control of Heterogenous Dynamic Drone Swarms*

NSERC PGS-D Research Scholarship

M.Sc. in Advanced Robotics

École Centrale de Nantes

2016 – 2018 — Nantes, France

Thesis title: *Design and Control of Aerial Cable-Towed Systems*

GPA - 17.9/20 **Class Ranking -** 1st

Masters Thesis Research Scholarship

B.Eng. in Mechanical Engineering

Dalhousie University

2011 – 2016 — Halifax, Canada

GPA - 3.65/4.3

3x Sexton Scholar Award

Int. Baccalaureate Entrance Scholarship

LANGUAGES

English ★★★★★

French ★★★★☆

SKILLS

Programming
My areas of proficiency are:

Matlab | Simulink | C++ | ROS | Python | Linux | Gazebo

Design
I have used the following design tools:

SolidWorks | MSC Adams | 3D printing

Robotics
My direct experience includes:

Quadrotors | Parallel Robots | Serial Robots | Non-Linear Control | Swarms | Vision-based Control | Kinematic & Dynamic Modelling