



✉ william.jussiau@gmail.com

📅 30 years old

☎ +33675480474

🏠 Dijon, France

📍 Europe

Languages

English

› TOEFL : 106/120

German

Italian

Technical skills

Matlab

Simulink

Python

C++

Parallel computing

Unix OS

git

WILLIAM JUSSIAU

PhD (2024) in control theory applied to fluid dynamics, looking for a post-doc opportunity

I have completed my PhD in July 2024 and am now looking for a post-doc opportunity in applied control theory. I am curious and adaptable, always eager to learn and to tackle multi-disciplinary subjects, particularly those linked to urgent contemporary issues. I also have a strong interest in teaching and supervising students.

Education

PhD in control theory applied to fluid dynamics

From September 2020 to July 2024

ONERA - The French Aerospace Lab Toulouse, France

Synthesis of control laws for oscillator fluid flows

- Developed a simulation tool for 2D incompressible flows
- Developed three synthesis methods: Youla parametrization and optimization, data-based iterative stabilization, numerical continuation.

Advisors: Pierre Apkarian, Fabrice Demourant, Colin Leclercq

Academic exchange

From February 2016 to July 2016 QUT Brisbane, Australia

Data mining, machine learning, deep learning

Master of Science in aerospace engineering

From September 2014 to September 2018

ISAE-SUPAERO Graduate School of Aerospace Toulouse, France

Specialization in control theory: estimation theory, filtering, dynamical systems (representation, identification, analysis and control)

Work experience

Research control engineer

From April 2018 to July 2020 Safran Paris, France

- Studied the **aerial anticollision system** for unmanned aircraft ACAS Xu and statistical airspace encounter models
- Developed and implemented an anti-collision algorithm for unmanned aircraft with **nonlinear MPC** (*Matlab + ACADO Toolkit*)
- Developed an **optimal control** tool for an airborne vehicle with rocket engine under constraints (*Matlab*)
- Developed a pipeline for the real-time control of a targeting sight: identification with recurrent neural network and control with **MPC**

Research project

From October 2017 to March 2018 LAAS-CNRS Toulouse, France

Vehicle trajectory generation with MPC (*ROS + ACADO Toolkit*)

Intern in software engineering

From September 2016 to January 2017 Thales Brest, France

Research intern in fluid dynamics

From March 2016 to July 2016 ISAE-SUPAERO Toulouse, France

Teaching experience

Teaching assistant in Toulouse University, France

- Signal processing (Level: BSc, Advanced Masters) - 50hr
- Control theory (Level: BSc, MSc) - 60hr
- Supervision of two 2-year MSc projects, each with two students

Interests

Sports

Sailing
Trekking and trail running

Other interests

Wikipedia contributor
Trading Card Games
Mycology
Sewing

Published work

Code

- Toolbox for the simulation and control of 2D incompressible flows
github.com/williamjussiau/flowcontrol

Journal papers

- Jussiau, W., Leclercq, C., Demourant, F., & Apkarian, P. (2024). Data-driven stabilization of an oscillating flow with linear time-invariant controllers. *Journal of Fluid Mechanics*, 999, A86.
- Jussiau, W., Leclercq, C., Demourant, F., & Apkarian, P. (2022). Learning linear feedback controllers for suppressing the vortex-shedding flow past a cylinder. *IEEE Control Systems Letters*, 6, 3212-3217. *Presented at the Conference on Decision and Control 2022*
- [Accepted: 27/01/2025] Jussiau, W., Demourant, F., Leclercq, C., & Apkarian, P. (2025). Control of a Class of High-Dimensional Nonlinear Oscillators: Application to Flow Stabilization. *IEEE Transactions on Control Systems Technology*.

Conference papers

- Pascual Albericio, M., Gonzalez Tamarit, I., Magnani, G., & Jussiau, W. (2024). Model Reference Adaptive Control and Reference Governor: Numerical Results on Parrot Bebop 2. In *AIAA SCITECH 2024 Forum* (p. 2219). *Supervision of two MSc students*

References

Pierre Apkarian

Researcher in control theory (retired in 2024), ONERA. Role: PhD supervisor and main advisor
pierre_apkarian@yahoo.fr

Colin Leclercq

Researcher in fluid dynamics, ONERA. Role: PhD advisor
colin.leclercq@onera.fr

Fabrice Demourant

Researcher in applied control theory, ONERA. Role: PhD advisor
fabrice.demourant@onera.fr

Christelle Cumer

Researcher and scientific unit manager, ONERA. Role: supervisor of most of the teaching experience at ISAE-SUPAERO
christelle.cumer@onera.fr

Philippe Feyel

Research engineer, Safran Electronics & Defense Canada. Role: former technical manager on control problems (2018-2020)
philippe.feyel@safrangroup.com