

ALEXANDRE BONNEFOND

Drone Systems Architect - Control Systems & UX

@ alexandre.bonnefond95@gmail.com
📍 Prague

+420 733 666 434
alexandre-bonnefond-076376139

Křišťanova 1638/12, 130 00
alexandre-bonnefond



EXPERIENCE

Fly4Future System Engineer Specialist - UAV platforms

⌚ 03 2024 - ongoing 📍 Prague

- Led development of a web app for UAV setup and control
- Oversaw integration of diverse onboard sensors
- Defined UAV architectures from client needs to technical specifications

Dassault Systèmes Corporate Research Intern

⌚ 03 2019 - 08 2019 📍 Paris

- Implementation of bio-inspired control law for UAVs
- Obstacle avoidance and motion planning in dense environments

CorWave Technology Manager Intern

⌚ 02 2018 - 07 2018 📍 Paris

- Technical design and development of a new test bench

Airbus Safran Launchers Assistant Engineer Intern - Ariane 5

⌚ 09 2016 - 02 2017 📍 Les Mureaux

PROJECTS

DYNAFLOCK INRIA

Study of decentralized spatial coordination models allowing to deploy a swarm of UAVs in complex environments (urban-type) while maintaining the connectivity among them.

Catch the Drone Challenge MBDA

Design of tracking algorithms in order to intercept a malicious drone. These algorithms relies on multi-drone tracking strategies including reinforcement learning and full-state feedback control. Market analysis was also conducted. See video 1 and 2.

PUBLICATIONS

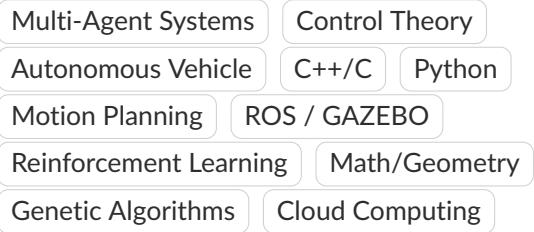
✉️ Journal Articles

- A. Bonnefond, O. Simonin, and I. Lassous, "Modèles de flocking adaptés aux environnements avec obstacles et communications dégradées," *Revue Ouverte d'Intelligence Artificielle*, vol. 4, pp. 123–145, Jul. 2023. DOI: 10.5802/roia.59.

👤 Conference Proceedings

- A. Bonnefond, O. Simonin, and I. Guérin-Lassous, "Extension of flocking models to environments with obstacles and degraded communications," in *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021, pp. 9139–9145. DOI: 10.1109/IROS51168.2021.9635944.

STRENGTHS



LANGUAGES

English



Spanish



EDUCATION

Ph.D. in Computer Science

INSA LYON

⌚ 11 2019 - 06 2023

Thesis: *Dynamic flocking based on link quality in swarm of UAVs*

- Multi-agent autonomous system
- Asymmetric Flocking control: <https://youtu.be/-JISUy9WgX4>
- Evolutionary strategy
- Communication constraints
- Incremental Leader/Follower algorithm: <https://youtu.be/zKcpsBHAMAg>

M.Sc. in Complex Systems

UTC

⌚ 09 2018 - 08 2019

Engineering Degree in Mechanics

UTC

⌚ 09 2015 - 07 2018

REFEREES

Prof. Olivier Simonin

@ INSA Lyon

✉️ olivier.simonin@insa-lyon.fr

Prof. Isabelle Guerin-Lassous

@ Claude Bernard Lyon 1 / ENS Lyon

✉️ isabelle.guerin-lassous@ens-lyon.fr