

# Design and implementation of a multiagent simulator for aerial drones

Université de Technologie de Belfort-Montbéliard



**NICOLAS BAUDIN**  
INTERNSHIPS IN FRANCE INITIATIVE

Name of the hosting institution in France	Université de Technologie de Belfort-Montbéliard
Name of the host laboratory / research team	Connaissance et Intelligence Artificielle Distribuées (CIAD)
Address	13 Rue Ernest Thierry-Mieg 90010 Belfort cedex
Website	<a href="http://www.utbm.fr">http://www.utbm.fr</a> - <a href="http://www.ciad-lab.fr">http://www.ciad-lab.fr</a>
Name of the supervisor	Stéphane GALLAND
Function	Deputy Director of CIAD lab
Email	stephane.galland@utbm.fr
Phone number	+33 384 583 418

## Internship offer

Topic of the internship (title)	Design and implementation of a multiagent simulator for aerial drones			
Proposed dates of the internship	<b>Start</b>	01/11/2021	<b>End</b>	31/01/2022

### Scientific and academic objectives of the internship:

SARL (<http://www.sarl.io>) is a software framework that enables to create multiagent system applications. Among all the possible applications, unmanned aerial vehicles (or drone) simulation is one that is at the centre of multiple research projects into the CIAD lab (including the regional UrbanFly project). The goal of the internship student is, on the basis of the existing implementation of a drone simulator written with SARL and using the AIRSIM framework, to design and implement specific agent behaviours for simulating swarm of drones in urban environments and their energy consumption. All the works will be based on state-of-the-art models. The technologies that will be involved in the project are: SARL, Java and AIRSIM. The deliverable documents will be: a software module for the SARL simulator, a draft of int. conference paper that is explaining the design of the agent's behaviours and their experimental validation.

## Australian partner

Name of the Australian partner institution	Royal Melbourne Institute of Technology
Lab/department/team involved in the collaboration	School of Computing Technologies
Main contact in the Australian partner institution	Sebastian Rodriguez
Function	Senior Lecturer / Researcher
Email	sebastian.rodriguez@rmit.edu.au

Outside of this ongoing collaboration, will students from other Australian universities be considered by the hosting institution in France?	Yes
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## Expected profile of applicant

Level of study	Master
Discipline	Computer Science
Prerequisite knowledge, qualities and skills	Object oriented computer programming, artificial intelligence, multiagent systems (optional), 3D modelling
Other specific eligibility criteria	None