RMIT UNIVERSITY

Call for PhD Applications in Aerial Robotics at RMIT Vietnam

Physically Capable Aerial Robots for Environmental and Infrastructure Applications

Project description

The demand for aerial robots is rapidly expanding in fields such as ecological monitoring, infrastructure inspection, and disaster response. While current aerial robots are proficient at reaching and observing hard-to-reach locations, their capabilities remain constrained by limited endurance and a lack of robust interaction functionalities (e.g., limited to only seeing, not doing). Enhancing these robots to be able to provide physical services, such as sensor placement for environmental monitoring, structural inspections over time with NDE sensors, and even complex interventions (e.g., firefighting, object manipulation), would significantly broaden their application scope. This potential, bolstered by growing interest in the subfield of aerial manipulation, signals a new frontier for aerial robotics.

Despite recent progress, aerial robots still face limitations in dynamic and unpredictable environments. Current systems typically manage only basic interactions—such as single-point contacts or predefined action sequences—due to the challenges posed by floating-base dynamics, aerodynamics, and the absence of accurate proprioceptive sensing. These factors make aerial robots vulnerable to the disturbances and uncertainties inherent in unstructured environments. This research will tackle these challenges by focusing on both design and control aspects, which are intertwined and should be addressed holistically. The aim is to develop a tightly integrated approach to realize a new type of flying robot with novel capabilities. The candidate will contribute to the development of innovative aerial platforms and efficient control and planning algorithms that leverage the design, inspired by real-world applications in environmental monitoring, infrastructure assessment, and disaster response. This work aspires to advance the field, creating a new generation of aerial robots with advanced manipulation capabilities.

RMIT PhD programs

The program welcomes applicants with either **a Bachelor's** or Master's degree in STEM. Candidates must demonstrate English proficiency, with an **IELTS score of 6.5** or equivalent. The program offers full tuition coverage and a **competitive annual stipend**, with opportunities to earn **additional funding** through Research or Teaching Assistant roles. A dedicated budget is also available to support participation at **leading international conferences**.

The PhD work will primarily be conducted at Saigon South Campus, RMIT, Vietnam, with opportunities to work at **City Campus, RMIT Australia**. The program is designed to be completed in 3–4 years, culminating in a **PhD degree awarded by RMIT University**.

For details on eligibility and benefits, visit: https://www.rmit.edu.vn/study-at-rmit/phd-programs.

Academic advisors

Hai-Nguyen Nguyen
Lecturer in Robotics & Mechatronics
School of Science, Engineering & Technology
RMIT Vietnam, Saigon South Campus, Vietnam
https://academics.rmit.edu.au/hainguyen-nguyen

How to apply

Candidates should send a detailed CV along with a motivation letter to Dr. Hai-Nguyen Nguyen (hainguyen.nguyen@rmit.edu.vn). Applications will be reviewed in a rolling basis.