THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

GLOBAL ENGAGEMENT OFFICE
環球事務處

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Junior Researcher Mentoring Programme 2023

Code:	JRMP2023_03
School / Department:	Department of Building Environment and Energy Engineering
Name of Research Team Member(s):	Dr Huang Xinyan, Assistant Professor Mr Wang Meng, Research Assistant Mr Cheung Wai Kit, PhD Student
Research Topic:	Smart Firefighting with AI and Robots
Short Description of the Research Project:	Fire is a primary hazard in urban regions of high population density like Hong Kong. Costs due to losses from fires are estimated at approximately 1 percent of global GDP per year. Conventional fire safety research and technologies only focus on building fire safety and evaluation of residence. However, firefighters are left facing an unpredictable hazard that they are neither trained nor equipped to deal with, and many sacrificed themselves in their heroic operations. This research aims to develop the world's leading smart robotic firefighting technologies and strategies. The proposed smart firefighting robots and Unmanned Aerial Vehicles (UAVs), powered by artificial intelligence (AI) and Internet-of-Things (IoT) sensor networks, will significantly reduce fire causalities, improve urban fire resilience, and firefighting efficiency. With newly developed AI-driven fire forecast, we are now developing the world's first AI-driven robotic firefighting system. Implementation of such a system for smart firefighting will contribute enormously to Hong Kong becoming the world's leading smart city.
No. of Places Offered:	2

Frequency of Meetings:	Weekly/ Bi-weekly
Special Requirement(s):	Participating students should be interested in physics and programming.

* The information presented above is subject to change.