UAV-Assisted Emergency Response: An Interdisciplinary Perspective

Yuying LONG[a], Haoyue ZHANG[b], Xinyue WANG[a], and Gangyan XU [a,1]

[a] *Department of Aeronautical and Aviation Engineering, Faculty of Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong*
[b] *Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China*

Abstract. Unmanned Aerial Vehicles (UAVs) have attracted much attention from industries and academia because of their high accessibility, flexibility, efficiency, and low energy consumption. In the last decade, UAVs have been successfully applied in various emergency scenarios, and many new technologies and approaches have emerged from different disciplines. To facilitate the UAV application and technological development in emergency scenarios, this paper systematically analyzes UAV-assisted emergency response from the perspectives of different disciplines and their interactions. Specifically, an in-depth bibliometric analysis was conducted on the related research papers published in the last twenty years. Then the application scenarios, technological focuses, and open questions were discussed. Results show that UAV-assisted emergency response is a typical interdisciplinary topic that attracts contributions from disciplines including medicine, communication, geology, and transportation. In particular, the interdisciplinarity of the medicine-transportation domain, communication-geology domain, and transportation-communication domain has been widely discussed.

Keywords. Unmanned Aerial Vehicle (UAV), emergency management, disaster response, bibliometric analysis, interdisciplinary perspective

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[1] Corresponding Author, Mail: gangyan.xu@polyu.edu.hk