

« Towards Fully Autonomous Aerial Mapping »

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Abstract: Autonomous aerial mapping systems can provide crucial information for many applications, from industrial inspection to agricultural monitoring. Many semi-autonomous aerial systems that can fly GPS-guided preplanned missions (e.g., DJI drones) already exist, but these can usually only operate in certain environments and require oversight from a human pilot. Fully autonomous aerial systems adaptively plan a flight trajectory online from live sensor measurements. This allows them to map complex environments without oversight from a human pilot. Research on fully autonomous aerial mapping systems has advanced significantly in the past decade, but operating them in highly dynamic and unstructured environments (e.g., forests) remains an open challenge.

Biography: Rowan Border is a postdoctoral researcher with the Vision for Robotics Lab (V4RL) at the University of Cyprus (UCY). His research focus is mission planning algorithms for autonomous aerial mapping systems. Rowan was previously a PhD student and postdoctoral researcher at the University of Oxford, where he led a project to develop an autonomous aerial platform with multi-mission mapping capabilities. The platform was designed for surveying large outdoor structures over multiple flights to perform infrastructure inspection.