ABSTRACT

TITLE:	The Hopkopter: A Solution to Maneuvering in Cluttered Environments for Extended Periods of Time
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ABSTRACT: The goal of this project is to design an autonomous robot to operate and avoid objects in the air as well as navigate and avoid obstacles along the ground. Currently robots only move in one of three domains: air, land, or water. Flying robots are very agile, but use a great deal of energy and cannot be deployed for very long. Robots that move along the ground have longer deployment time, but have difficulty maneuvering around obstacles. By combining these qualities we can improve navigation by allowing the robot to move over or around obstacles. This allows the robot to better survey it's environment, and conserve energy while deployed. This blend of features will enable long-term autonomy in cluttered and hazardous environments. The robot should have a one-day deployment time, and must be built for a for a wide range of applications, as it will serve for a platform for further research. Interested parties could include: academia, military, government, industrial, agricultural, and search and rescue units.