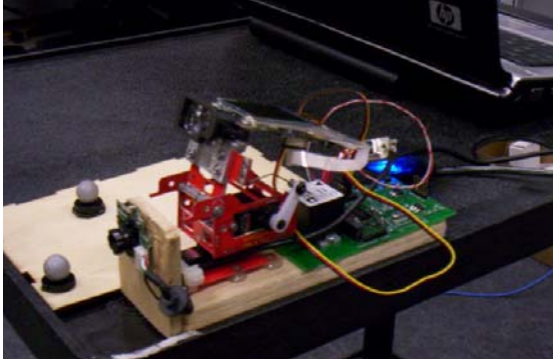


## **Monocular Vision Localization for Indoor Navigation**

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**Sponsor:** Air Force Research Laboratory (AFRL)



There have been great advances in recent years in the area of indoor navigation. Many of the new navigation systems rely on digital images to aid an inertial navigation system. While the Air Force Institute of Technology (AFIT) has been conducting research in this area for a number of years, a new system in development is a monocular camera system (pictured above left) which uses a small gimbaled laser range sensor to estimate feature locations in order to aid inertial sensor measurements. Because of its compact size and light weight, this system could provide micro aerial vehicles (such as the quad rotor pictured above right) or small ground robotic vehicles with the ability to navigate and map unexplored environments were GPS is denied or unavailable.

The views expressed in this article are those of the authors and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government.