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OPTIMAL REMOTE SENSING WITH SMALL UNMANNED AIRCRAFT SYSTEMS AND RISK MANAGEMENT

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Abstract:

Over the past decade, the rapid rise of Unmanned Aircraft Systems (UASs) has blossomed into a new component of the aviation industry. Though regulations within the United States lagged, the promise of the ability of Small Unmanned Aircraft System (SUAS), or those UAS that weigh less than 55 lbs., has driven significant advances in small scale aviation technology. The dream of a small, low-cost aerial platform that can fly anywhere and keep humans safely away from the 'dull, dangerous and dirty' jobs, has encouraged many to examine the possibilities of utilizing SUAS in new and transformative ways, especially as a new tool in remote sensing. However, as with any new tool, there remains significant challenges in realizing the full potential of SUAS-based remote sensing. Within this dissertation, two specific challenges are addressed: validating the use of SUAS as a remote sensing platform and improving the safety and management of SUAS.

Biography:

Brandon Stark is the Director of the University of California's Center of Excellence on Unmanned Aircraft System Safety where he provides expertise, support and training for regulatory compliance, risk management and the safe operation of unmanned aircraft systems (UAS) across the University of California system. Before founding the Center, he was founding lab manager of the Mechatronics, Embedded Systems and Automation Lab at UC Merced, where he managed the research enterprise of the multidisciplinary group while pursuing his doctorate in Electrical Engineering and Computer Science. His research interests are primarily in the use of Small Unmanned Aircraft Systems in Remote Sensing applications, UAS safety, control theory and path planning. Brandon received his B.S. in Computer Engineering at UC Irvine and M.S.'s in Computer Engineering and Electrical Engineering at University of Bridgeport.