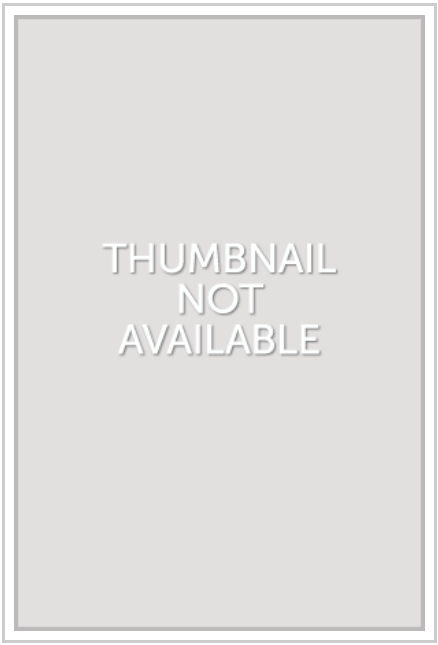

Development of an Experimental Platform for Testing Autonomous UAV Guidance and Control Algorithms

By Justin R. Rufa

Bibliioscholar Dez 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x6 mm. This item is printed on demand - Print on Demand Neuware - With the United States' push towards using unmanned aerial vehicles (UAVs) for more military missions, wide area search theory is being researched to determine the viability of multiple vehicle autonomous searches over the battle area. Previous work includes theoretical development of detection and attack probabilities while taking into account known enemy presence within the search environment. Simulations have been able to transform these theories into code to predict the UAV performance against known numbers of true and false targets. The next step to transitioning these autonomous search algorithms to an operational environment is the experimental testing of these theories through the use of surrogate vehicles, to determine if the guidance and control laws developed can guide the vehicles when operating in search areas with true and false targets. In addition to the challenge of experimental implementation, dynamic scaling must also be considered so that these smaller surrogate vehicles will scale to full size UAVs performing searches in real world scenarios. This research demonstrates the ability of a given sensor to use a basic ATR algorithm to identify targets...

Reviews

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