

2nd International Conference and Exhibition on

Satellite & Space Missions

July 21-23, 2016 Berlin, Germany

Analysis and simulation of aerial unmanned vehicle using pure pursuit guidance law

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In this paper, an analysis and simulation of aerial unmanned vehicle is presented which have proven its usefulness in the military and civilian applications in recent years. The kinematic three degree of freedom [3DOF] equations of motion for the aerial unmanned vehicle is proofed using pure pursuit guidance method which is known as path planning algorithm. To solve the equations of motion, the numerical integration is used by applying Euler method. The pure pursuit guidance method was stretched well beyond its intended usage by many aerospace applicant ions. The pure pursuit algorithm is used to accomplish goal-seeking and path tracking. An analysis and flight trajectory simulation for the aerial unmanned vehicle is given based on constructing MATLAB program describing both rotational and transition motion with the total time of flight.

Biography

Ahmed R El-Sawi received the Bachelor's degree in Electrical Engineering from Military Technical College, Cairo, Egypt, in 2007. He is working to finalize his Master's degree and expected to finish it in 2016. His area of interest is Control and Navigation techniques for Aerospace systems.

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