FACULTY MENTOR
Gudem, Prasad

PROJECT TITLE
Hawk-eye to capture flight trajectory of a boomerang
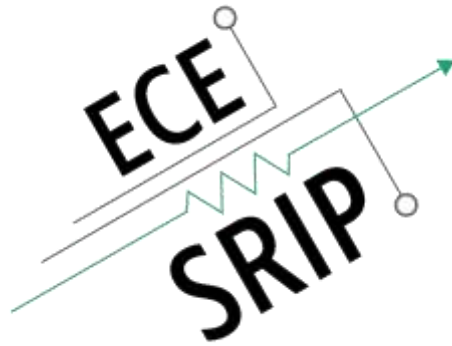
PROJECT DESCRIPTION
Goal of this project is to detect the motion of fast moving objects. Boomerang as fast flying object will be used to develop the methodology. Boomerang needs to be detected in the video image and the location of the boomerang's X-Y coordinates in the image frame need to be extracted. In addition, the orientation (Euler angles) of the boomerang need to be extracted.

INTERNS NEEDED
2 MS students

PREREQUISITES
Matlab is a strong requirement. Courses/experience in digital image processing is highly desirable. Courses/experience in pattern recognition or deep learning will be very valuable.

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PROJECT TITLE
Non-GPS Accurate Positioning Location

PROJECT DESCRIPTION
Despite the ubiquity of GPS, it suffers from several drawbacks (a) susceptible to jamming by enemy (b) accuracy is limited to 1m (c) loss of signal for non-line-of-sight (such as indoor application). Ultra-wide-band (UWB) technology is envisioned to address these drawbacks. Students will build prototypes using commercially available hardware and evaluate several approaches to overcoming the challenges (a), (b) and (c).

INTERNS NEEDED
2 students (both students can be B.S. or M.S.)

PREREQUISITES
Experience in working with board-level hardware and software.