ABSTRACT

In late 2011, a new genre of online video blogging gained popularity thanks to platforms like YouTube. Video blogging, also known as Vlog, is a popular video format for online influencers to create online content. Whether it is just a personal video, product review, marketing video, or even used in education as an instructional video and lectures, vlogging obviously requires a camera. Using a conventional camera requires a setup for a place, and the set is usually stationary. To move around outside the location of a set, vloggers need to carry the camera with them.

The use of a quadcopter drone with a camera for vlogging can reduce the hassle of setting up a place or carrying the camera around. Therefore this undergraduate thesis will develop a system for autonomous following drone based on face recognition to follow a certain person recognized by the drone. Haar cascade method is used to perform the face detection, then carried on to Linear Binary Pattern Histogram algorithm to identify the person's face. This undergraduate thesis will use DJI Ryze Tello for the drone and a computer to process the video feed from Tello. Then the computer also acts as ground control to send movement commands to Tello in order to achieve autonomous movement following a recognized face.

Based on the tests carried out in this final project, the DJI Tello camera has a resolution of 960x720p and can transmit a video feed to a laptop for processing. Face recognition from the Tello camera has a working distance for recognition from 40cm away from face with 50% confidence until 200cm with around 3% confidence. The Tello drone moves quite well for leftward rightward movements, and upward downward movements following the face recognized without advanced control system.

Keywords: *Quadcopter, Haar Cascade, LBPH, Face Recognition, Drone Follower, Vlog*