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Capstone 3 - Image Segmentation

Project Proposal

Amazon, UPS and Domino’s are all investing in the future of Drone Delivery. What is Drone Delivery? It is the act of using drones to deliver company products to consumers. A use case for Domino’s would be to deliver pizza using drones to customers within a close range. Currently, there is a demand from the technology that would allow these drones to operate almost independently of user input while making deliveries. The aim of this project is to explore, understand and make contributions to the technology that would give drones the capability to make deliveries. This technology would be beneficial to any large company that has deliverable products. Drones save a lot of time compared to vehicle deliveries, there is no traffic to plan for and there is little to no need for an operator. By switching to drones for all short range deliveries, any company can save both money and time. Drones can be used to quickly deliver small parcel packages such as life saving medication, or less important items such as a new pair of headphones from Amazon. Amazon previously disrupted the industry with prime 2-day shipping, and they’re currently doing it again with prime 1-day or same day delivery in select areas. As the race continues for companies to minimize delivery time of online orders where more and more consumers are shopping online over brick-and-mortar stores, the use-case of Drone delivery is very real. Data for this project will be pulled from Kaggle and Google datasearch. To conduct an experiment like this, hundreds of images capturing UAVs are needed as well as their surrounding environments. In order to solve this problem, I will conduct training and testing on a large set of UAV images. Once I’m certain each image is properly labeled, I will then start training an algorithm through computer vision to recognize the images surrounding a drone and recognize what images are meant to be avoided. The final deliverables for this project will include a completed notebook, a paper detailing every step of the project along with the assumptions, testing parameters, conclusions and areas of improvement as well as a slide deck.