Reconnaissance & Medical Drone

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Our project is heavily inspired by the utilization of drones in the current ongoing conflict in Ukraine. We focused mainly on 2 ideas. The first one being human detection for search & rescue missions. The second idea was to transport medical supplies to rural areas. In return, it aids paramedics, ski patrollers, military operations, and SAR teams. This can all be done with advanced python libraries and drone technology. We commenced our research on imagining a multi-use programmable drone that can be applied in many situations on the field. In order to accomplish our goal, we consulted resources online and combined existing knowledge of drones together. Among its surveillance and supply delivery capabilities, it is infinitely expandable. Parachute deployment, flares, and even explosive charge release for avalanche control are possible. Our drone is fully autonomous and can fly along predesignated flight paths removing the need of a human operator at all times. OpenCV, a python library, can analyze individual frames coming from our drone, allowing us to identify different entities. With the recent explosion of AI, we can find pre-trained models to detect virtually anything. Terrain topography, vegetation type, and even humans are all possibilities. At the moment we can only identify humans as we wanted to focus more on the functionality of the drone rather than its AI capabilities. At the moment our drone can only carry roughly 500-900g of cargo. So only light supplies like insulin and vaccines could be transported.

Awards Won: