Title of the project	**Real-time visual detection of aircraft from ground infrastructure using deep neural networks**
Project description	The exponential increase in the number of drones along with other flying objects such as airplanes, helicopters parachutists etc. is a growing concern regarding potential collision threats. In this context, the CV-Lab in partnership with the company FLARM has developed a lightweight video-based system able to detect threats and alert the pilot and drone operators. Parallelly, the Lausanne-based startup INVOLI is developing systems able to detect comprehensively flying objects for collision avoidance strategies. This semester / master project intends to develop a computer-based vision system in order to detect flying aircraft in real-time, with the goal to keep a low computational power. Attention will be dedicated to images that can be small or highly distorted. Deep learning algorithms will be used based on the wide database collected during the CV-Lab-FLARM project.
Tasks	• Review the literature on computer-detection of aircraft using deep learning • Compare and select algorithms based on the literature review • Track small aircraft on image • Validate algorithm on highly distorted images
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