Deep Learning for Automated Threat Detection for Airport X-ray Baggage Screening

Security screening of travelers and their personal belongings carried on board of aircraft is very important in ensuring and guaranteeing passengers' security and safety. Hand searching and visually picking out these items from displayed image scans would be both time-consuming and tedious process for human experts. Then again, the human experts have a few seconds to make the, and the objects inside baggage can be rotated. Automating the detection of probable threat items from x-ray scans of passengers' baggage can certainly speed-up and increase the efficiency of the security screening process. Automated screening using machine learning algorithms is a popular choice for this purpose. However, traditional machine learning algorithms depends on the hand-crafted features of the object, such as edges and shapes. Deep learning can overcome this issue with its unique feature of automatic identification of the features. This project focuses on developing a deep learning-based automated threat detection system at airport security checkpoints to keep dangerous items off airplanes.

Required Skills: Knowledge on several deep learning techniques, Experience on implementing ML techniques using Python.