



Simulation assisted AI based Automation of X-Ray Baggage Scanning

PID: 2021\DSAI\005

It is proposed to use AI trained engines to automatically recognize targets inside a baggage scanner using simulated data sets. The x-ray simulation package developed by IIT Madras will be used for creating a large data base of images on simulated targets inside a duffle bag. The limits of automated recognition will be explored.

Task to be assigned to the intern: To understand the functioning of the baggage scanners and to use X-ray simulator to capture a large number of images and validate the same. Then to develop a large enough data base of calculated images using different scenarios and to train appropriate AI engine model to develop automated recognition algorithms and estimate the probability of detection.

Learning outcome: The Intern will learn on 3 fundamental technologies i.e., X-ray based baggage scanning technologies, Simulation based database generation, and AI/ML.

Duration: 6 months

Skills required: Understanding of AI based tools and if possible fundamental of x-ray imaging.

Pre-requisite courses: Machine Learning, AI

No. of interns required: 1