# **Deep learning for site safety:** Helmet-Safety-Vest-Detection

**Abstract:**

Based on the Kingdom’s 2030 vision for artificial intelligence applications to enhance safety procedures in factories where wearing safety helmets can effectively protect workers safety on construction sites. However, workers often take off the helmets because of weak security-conscious and discomfort, then hidden dangers will be brought by this behavior. Workers without safety helmets will suffer more injuries in accidents such as falling human body and vertical falling matter. Hence, detecting safety helmet wearing is a vital step of construction sites safety management and a safety helmet detector with high speed and accuracy is urgently needed. However, traditional manual monitor is labor intensive and methods of installing sensors on safety helmet are difficult to popularize. Therefore, this model proposes a deep learning-based method to detect safety helmet wearing at a satisfactory accuracy with high detection speed.

**Design**

This project is one of the T5 Data Science Boot Camp requirements. The dataset containing images of people wearing helmets and people without helmets.

**Algorithm:**

After this module, we should be able to do the following:

1. Import Datasets
2. Detect Humans
3. Create a CNN to classify people wearing helmets and people without helmets.
4. Create a CNN to classify people wearing helmets and people without helmets (Transfer Learning)
5. Write the algorithm.
6. Test the algorithm.

**Communication**

* The slides will be provided here, Feel free to any pull requests.