# Safety First

## Improving Workplace Safety with Hard Hat Detection

#### Team Member

Stanley Yang, Lennard Vanderspek

#### Description

Workplace safety is very important but often overlooked. Most important way to keep workers safe is by wearing a hard hat. This project will utilize Convolution Neural Net and YOLO to help detect whether workers are wearing a hard hat or not.

##### Machine Learning Topics Used:

* Convolution Neural Net
* YOLO

#### Expected Outcome

A trained model that is able to detect whether workers are wearing a hard hat or not by implementing YOLO using PyTorch. We are hoping to utilize the model to bring more awareness to workplace safety.

#### Plan

##### Timeline

* Sunday 7/6 Research
* Sunday 7/13 Design and Prototyping
* Sunday 7/20 Data collection and preparation
* Thursday 7/24 Presentation

##### Task Decomposition

* Find data set for hard hats - Lennard <https://public.roboflow.com/object-detection/hard-hat-workers>
* Research/experimenting with YOLO
  + Build training framework - Lennard
  + Create PoC network architecture - Stanley
* Tune model, update architecture - 50/50
* Data Collection, prepare for presentation - 50/50