Saftey Helmet Detection

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Introduction

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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. Hence, detecting safety helmet wearing is a vital step of construction sites safety management. Therefore, this model proposes a deep learning-based method to detect safety helmet wearing at a satisfactory accuracy with high detection speed.

02

Problem Statement

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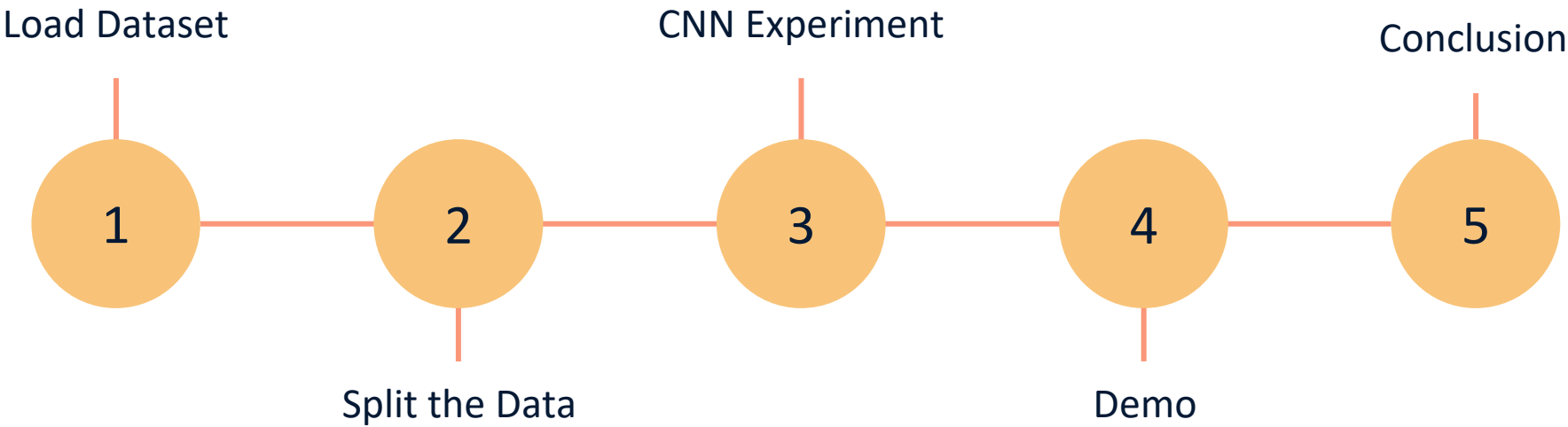
Head injury is still one of the most common causes of fatal accidents on the jobsite. Since the brain is so sensitive, it can be damaged by contact with the inside of the skull and by compression. Workers on a construction site, or any workplace where heavy objects and machinery operates, without wearing safety helmets will suffer more injuries in accidents such as falling human body and vertical falling matter.

03

Methodology

Methodology



04

Dataset

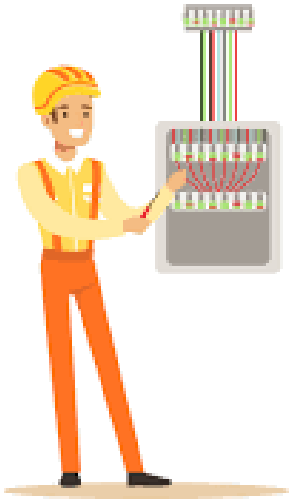
Source

Kaggle & Roboflow

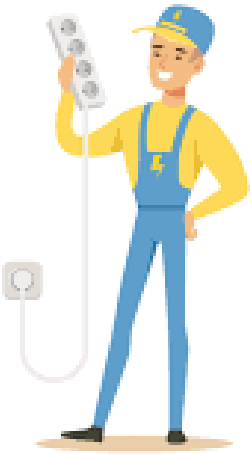
Type

Images

05



Experiment & Demo

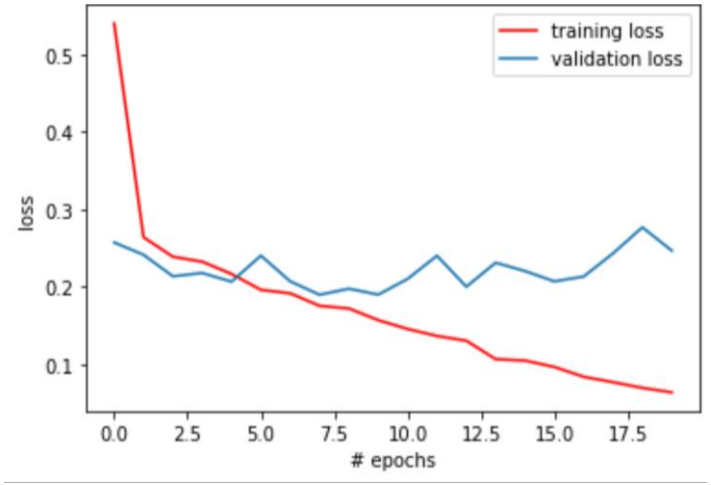


CNN Experiment

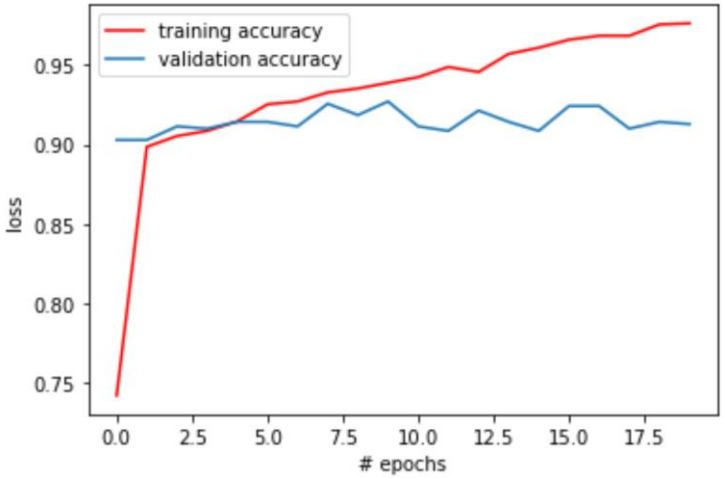
	Train	Validation
Loss	0.06	0.24
Accuracy	0.97	0.91

CNN Experiment

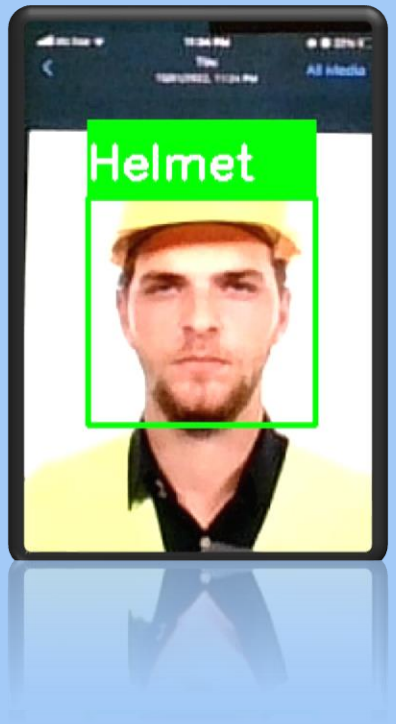
Loss



Accuracy



Demo



06

Conclusion

Conclusion

Worker Always should wear a safety helmet to ensure full protection. In extreme cases, these injuries may lead to permanent disability or even death causing irreparable loss.
For future work, we need to collect more data for more accuracy and detect vast and more safety products.

THANKS!