

Group 5 Pham and Do  
Summary of the report.

Several accidents in construction sites, and the industry is growing significantly every year. So the group proposed a new technology of applying fisheye images from 360 degrees overhead camera to use an AI agent for automatic supervision. It aims to achieve a fast and accurate model to fast reminders to workers. There are two major components in the AI model, which are the multi-Person Detector to locate every worker inside input frames, and the binary image classifier to determine if the worker has worn the required safety equipment.

For the detector, RAPID is used with Average Precision with IO = 0.5 and F-measure as the metric. It is expected to reach performance as in the original paper. For the classifier, efficientNetV2 is used, with Accuracy, Precision, and Recall as the metric. Two major datasets are used to train the model, which are the Human-Aligned Bounding Boxes from Overhead Fisheye cameras(HABBOF) and the Challenging Events for Person Detection from Overhead Fisheye image(CEPDOF). There are a total of 12 videos with over 30,000 frames to analyze. For the classifier, multiple sources are scrapped and crawled for analysis. They collected over 20,000 images for safety helmets and safety jackets.

- Describe the strengths of the report.

The report is detailed, with a clear methodology presented. The architecture is divided into two major parts of detector and classifier, with a detailed explanation of the motivation of choosing the corresponding model. A great effort is demonstrated in collecting the datasets, studying the topic, and selecting the models. Strong analytical skills are demonstrated on the proposed solution to overcome the difficulties in the project.

- Describe the weaknesses of the report.

- Evaluation on quality of writing (1-5): Is the report written? Is there good use of examples and figures? Is it well organized? Are there problems with style and grammar? Are there issues with typos, formatting, references, etc.? Please make suggestions to improve the clarity of the paper, and provide details of typos.

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The report is written and well organized. Many cap screens of the videos in training datasets are included to make readers understand how the detector and classifier works. The language is highly precise and accurate, able to explain a complex model without using over-complicated terminologies.

- Evaluation on presentation (1-5): Is the presentation clear and well organized? Is the language flow fluent and persuasive? Are the slides clear and well elaborated? Please make suggestions to improve the presentation.

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The presentation flow is clear, contents are well elaborated. The flow is easy to understand. As a reader, the presentation is intriguing and inspire me to think of possible applications in real-world problems using data science skills. I would like to suggest if they can include the possible difficulties and the solutions to overcome them.

- Evaluation on creativity (1-5): Does the work propose any genuinely new ideas? Is this a work that you are eager to read and cite? Does it contain some state-of-the-art results? As a reviewer, you should try to assess whether the ideas are truly new and creative. Novel combinations, adaptations, or extensions of existing ideas are also valuable.

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The project is self-proposed and the architecture is also self-created. The detector and classifier are carefully picked to finish the tasks. It is a state-of-the-art work with the latest machine learning models used. This work is of high quality that I would love to read and cite.

- Confidence in your assessment (1-3) (3- I have carefully read the paper and checked the results, 2- I just browse the paper without checking the details, 1- My assessment can be wrong)

3- I have carefully read the paper and checked the results