

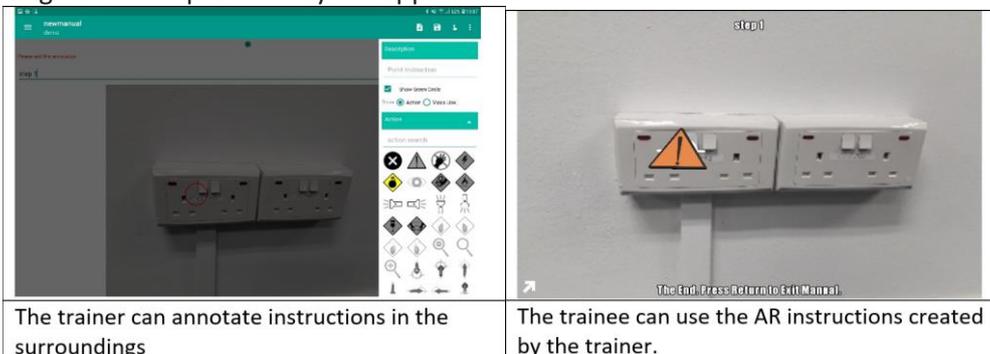
# Mobile Augmented Reality Instructional Manuals (MARIM)

In this work, we present a practical system which uses mobile devices for interactive manuals. In particular, there are two modes provided in the system, namely, expert/trainer and trainee modes. Given the expert/trainer editor, experts design the step-by-step interactive manuals. For each step, the experts capture the images by using phones/tablets and provide visual instructions such as interest regions, text, and action animations.

In the trainee mode, the system utilizes the existing object detection and tracking algorithms to identify the step scene and retrieve the respective instruction to be displayed on the mobile device. The trainee then follows the displayed instruction. Once each step is performed, the trainee commands the devices to proceed to the next step.

## Technology Features & Specifications

The system utilises AR Technology to provide visual instructions overlaid in the real environment for the trainee. The trainer is allowed to create these AR instructions using the editor provided by the application.



The trainer can annotate instructions in the surroundings

The trainee can use the AR instructions created by the trainer.

## Market Trends

According to a market research done by PRNewswire, in 2017, the global augmented reality and virtual reality market size stood at USD 11.35 Billion, and the industry is forecasted to reach USD 571.42 Billion by 2025, rising at a CAGR of 63.3 percent between 2018 and 2025. According to a Forbes article, educational experiences in VR and AR will become a common place throughout 2020. Due to the immersive nature of VR, learners can engage with learning in more experiential manner, and AR brings new flexibility to on-the-job training.

This MARIM technology can be easily set up for use in other work, health and safety courses or training. With this e-learning module, training cost can be reduced. It also helps to improve the trainer's productivity through easier management of the learning content.

### Benefits

- Trainee can use these AR Instructions without the need to interpret instructions from thick and cumbersome manuals which may lead to error.
- Offers just-in-time instructions will also help to reduce effort and time required to train new staff. The trainer is also allowed to create and edit these AR Instructions without any programming knowledge.

### Potential Application

- Educational
- Replacement for instruction manual
- On the job training

### Commercialisation Opportunities

- ✓ Ready for commercialization
- ✓ Available for licensing
- ✓ Accepting business plans from interested parties

### Contact Us

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