

## ABSTRACT

This final project aims to address occupational safety and health (OSH) issues in the workplace, particularly in the context of fire, by developing a Virtual Reality (VR) simulation application for OSH training. The background of this project is based on data from the International Labor Organization (ILO) which shows an increase in cases of occupational accidents and diseases, as well as an increase in deaths due to occupational accidents. Occupational accidents are often caused by factors such as equipment, people, materials, environment, and processes, indicating the need for adequate work equipment and effective occupational safety and health programs. The application developed in this project is a VR simulation for OHS training, designed to improve workers' understanding, skills and attitudes towards safety. The simulation covers realistic fire situations, allowing workers to respond to emergencies, evacuate, and use tools for fire suppression without any real risk. VR technology enables a realistic and interactive learning experience, which is expected to increase the effectiveness of OHS training. The results of application testing show that the use of VR in OHS training can improve workers' understanding, skills, and attitudes towards safety. However, the implementation of this technology is still limited and requires further research to ensure its effectiveness on a wider scale.

**Keywords:** Occupational Safety and Health (OHS), Virtual Reality (VR), OHS Training, Fire Incidents, Work Equipment, Occupational Diseases.