

# RZ Ecosystem Partner Solution

## MOSCHIP Smart Safety with PPE Kit Detection



### Solution Summary

MosChip® solution for smart safety in manufacturing and construction employs PPE (Personal Protective Equipment) kit detection on [RZ/V series](#) vision MPUs with DRP-AI Accelerators. This application provides detection of person / worker wearing standard PPE kit in working area to alert the safety monitor and keep the environment safe. Application developed with YOLOV5 architecture and deployed on [RZ/V2MA](#) edge AI accelerator.

### Features/Benefits

- Solve safety measures for construction and manufacturing industry
- Dataset collection and capture dataset of head, helmet, vest and person
- YOLOV5 architecture trained and validated with 80% dataset and inference accuracy for 10k images
- Web application for PPE detection on an Edge AI accelerator, enabling inference of the algorithm and conducting post-processing to display outputs
- Inference successfully performed on an Edge AI accelerator with inference time of 18 ms and speed of 10 FPS

### Diagrams/Graphics



### Target Markets and Applications

- Construction area
- Factories

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We are MosChip® – A trusted technology partner for SILICON | SYSTEMS | SOFTWARE | PRODUCT DESIGN. With 1300+ engineers and domain experts across India and USA, MosChip® continues to bring in digital and product transformation for businesses across the industries. We offer engineering services comprising of systems and product design, IoT solution design, Artificial Intelligence and Machine Learning, FPGA design, Mixed Signal IP design, ASIC design, verification, and validation.

MosChip® is a publicly traded company headquartered in Hyderabad, India, with a vision to be a preferred partner for technology and excellence throughout the entire product/solution development cycle, designing comprehensive and best-in-class solutions on time to achieve business and operational goals. Our team of experts empower businesses, technology providers and manufacturers to deliver innovative, customized, and scalable solutions for the domains like Automotive, Media & Entertainment, Industrial and Home Automation, Consumer Electronics, Telecommunications, Computer Vision, Networking, Data Center, and Healthcare, etc.

## AI ENGINEERING SERVICES OFFERINGS

### COMPUTER VISION

- Machine & Computer Vision Algorithms
- Object Detection, Identification & Visual Perception
- Image Capture & Optimization
- Vision Analytics & Processing
- Optical Character Recognition

### ML LIFECYCLE MANAGEMENT

- MLOps - Automated ML Pipeline Deployment
- Model Designing, Optimization, Testing & Porting
- Inference Engines & Metrics
- ML Transfer Learning Framework
- Data Augmentation & Annotation

### COGNITIVE COMPUTING

- Deep Learning & Neural Networks
- AI/ML on Edge & Cloud
- ML Application Acceleration
- Cross Platform Porting & Integration
- Natural Language Processing (NLP)

### AI/FPGA ACCELERATION SOLUTIONS

- Scene Detection & Text Analytics
- Predictive Analytics
- Audio Analytics & Keyphrase Detection
- Face Recognition
- ML Reference Designs & POC

## INDUSTRIES

- Automotive
- Industrial Automation
- Consumer Electronics
- Telecommunications
- Multimedia
- Computer Vision
- Security & Surveillance
- Medical
- Networking
- Energy & Utility

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