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IBM

Intelligent Light

Students: Richard Sokol, Erik Macháček, Dominik Forgáč, René Šoltés, Saron Tebebe

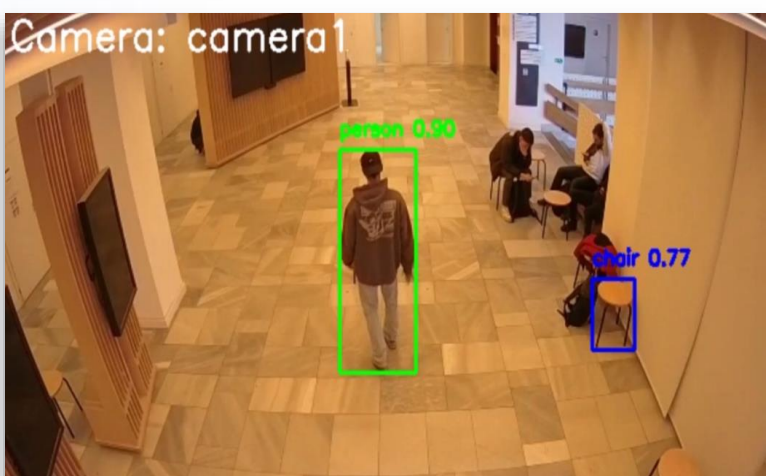**IBM:** Ing. Marián Ferenc, Ing. Jakub Kipikaša **University Mentor:** Ing. Ján Perháč PhD.

Problem Description
• public light is switched on continously, which leads to unnecessary energy consumption
• Traditional motion sensors have limited accuracy
• There is a lack of intelligent, adaptive solutions

Camera: camera1

Solution
• Intelligent application based on artificial intelligence
• Real-time person detection using **YOLOv8 and OpenCV**
• When a person is detected, the camera activates the light and automatically switches it off after a short delay once the person leaves

Evaluation of the Solution
• The application achieves energy **savings of up to ~50%** even during high-traffic hours
• More accurate detection compared to traditional motion sensors
• The solution is scalable and modular, suitable for smart cities, corridors, parking areas, and large facilities
• Contributes to reduced energy consumption and supports sustainability

Architecture

MACHINE LEARNING → **BACKEND** → **FRONTEND**

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