Wrong-Way Detector: Optoelectronic System To Detect Vehicles in the Wrong-Way Direction on Highways

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Every year on highways many accidents are caused by vehicles traveling in the wrong direction resulting in hundreds of deaths and injuries. We have developed a novel system that can limit this problem and save lives. Our project consists of: 1. a hardware device based on a Raspberry board coupled with a camera, and 2. a software that analyzes in real-time the incoming video stream, with the aim of recognizing moving vehicles and their direction. In case of detection of a vehicle moving in the wrong highway direction, our system is able to promptly provide various visual and audio alarms both to the driver, to induce him to stop, and to the Highway Control center and the authorities. Furthermore, our system uses low-cost hardware and therefore creates an economical, but reliable, tool. It can also be easily integrated with other security systems, without considerably affecting the manufacturing costs, a feature that will contribute to its easier and faster diffusion.

Awards Won: