CONNECTED WISE

Vision-Based Technologies for Advanced Transportation Safety

Overview

Connected Wise is an innovative startup based in Orlando, FL leveraging cutting-edge AI and embedded technologies to enhance transportation safety. Specializing in intelligent transportation systems, our solutions are designed to ensure safety across both urban and rural areas, focusing on regions typically underserved by conventional infrastructure.

Contact Information

- **Location:** Central Florida Research Park, Orlando, Florida, USA
- **Website:** www.connectedwise.com
- **Email:** partnership@connectedwise.com

Technology & Products

Smart Traffic Signs

Utilizing proprietary machine vision communication technology, our smart traffic signs provide vital safety information directly to vehicles. This system operates independently of traditional wireless infrastructure, making it ideal for rural and remote locations.

AutoVision™ Software

Complements our machine vision technology with ADAS, providing critical safety features. It combines our smart sign communication with powerful analytics and driver assistance capabilities.

VisionConnect™ Devices

Affordable retrofitting solutions that equip existing vehicles with our advanced driver-assistance systems, enhancing safety without the need for expensive hardware upgrades.

Current R&D Projects:

Project Name	Description
VECTOR	Adaptive smart dynamic message signs for more complex environments like intersections.
aWTS	Autonomous warning triangle systems designed for commercial vehicles, enhancing safety during emergency stops.
BWIM	Bridge Weight-In-Motion systems detecting overweight trucks, funded by a USDOT SBIR Phase 2 grant.

The Leadership

- **Enes Karaaslan, PhD:** Co-founder & CEO, expert in autonomous vehicle systems.
- **Tolga Ercan, PhD:** Specialist in intelligent transportation systems and sustainability.
- **Haluk Laman, PhD:** Focus on traffic safety and micro-simulation.
- **Farhad Huseynov, PhD:** Expertise in transportation infrastructure monitoring.
- **Vefa Ayyildiz, MSc:** Big data, machine learning, and computer vision.
- **Gustavo Diaz, MSc:** Embedded systems, sensor and hardware design.

Mission & Vision: Connected Wise aims to revolutionize transportation safety with cutting-edge technology, ensuring seamless safety across all roads for a future where every journey is secure and connected.

Smart Traffic Signs

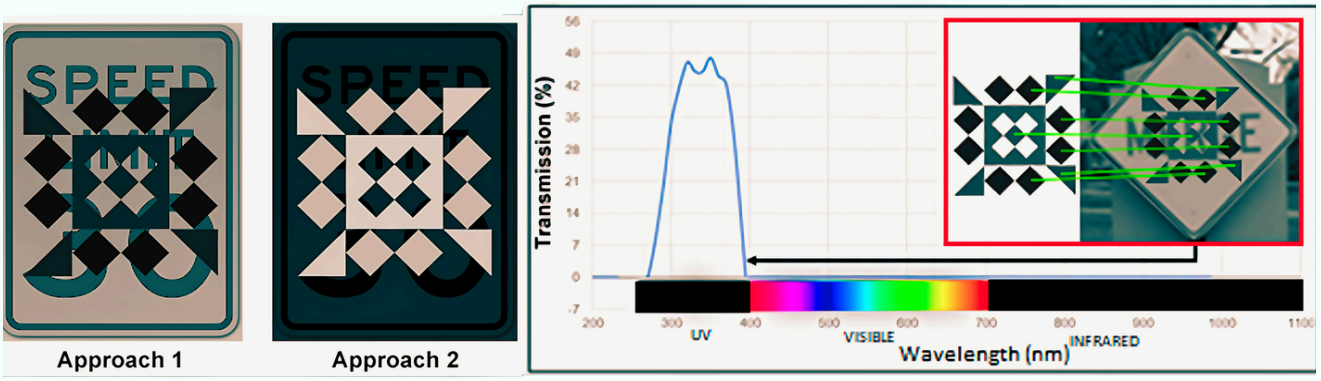
Clear Thin Film on Existing Signs

Our innovative Smart Traffic Signs leverage a clear vinyl thin film applied over existing road signs. This specialized film blocks UV light in specific patterns, encoding each sign with a unique identifier that remains invisible to the naked eye but detectable by equipped vehicles.

This unique identifier activates specific vehicle messages when detected, enhancing communication between infrastructure and connected vehicles, crucial for improving road safety and traffic flow.

Invisible Message via UV Spectrum Imaging

The thin film selectively blocks UV light to create distinctive patterns. These patterns form unique identifiers that are undetectable in normal viewing conditions but visible to UV-sensitive cameras in vehicles.



The UV camera detects the UV-blocked patterns on the signs, while the RGB camera manages standard traffic sign recognition. The vehicle's onboard system matches these detected identifiers against a local geodatabase updated via secure network connections.

AutoVision Software

Driving Perception with Real Time AI

AutoVision is equipped with state-of-the-art AI, designed to enhance driving safety by providing real-time environmental perception. This advanced software detects road users, identifies lane lines, and classifies traffic signs and lights with high precision, significantly improving the driving experience and safety.

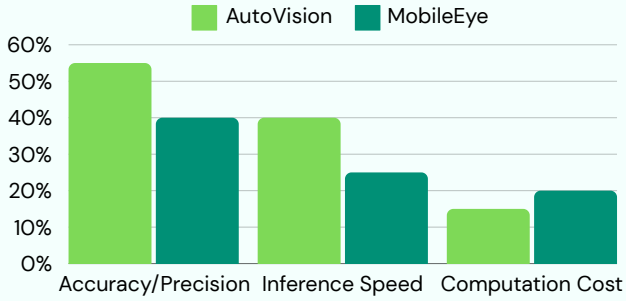
Robot Operating System (ROS 1 & 2)

AutoVision is fully compatible with both ROS 1 and ROS 2, the leading frameworks for robot programming, ensuring seamless integration into existing automotive systems. This compatibility allows AutoVision to be easily implemented in various vehicle types and robotic applications, enhancing flexibility and scalability.

ROS

Industry Performance Comparison

AutoVision's superior performance iz compared to industry benchmarks and demonstrates a competitive edge in autonomous driving technologies.



- Baseline performance is benchmarked against NVIDIA Drive

VisionConnect Device

Advanced Driver Assistance and Safety

VisionConnect leads the market in driver safety technology. It employs sophisticated algorithms to recognize U.S. traffic signs and signals, detect pedestrians and cyclists, and assess collision risks, alerting drivers through a responsive interface.

Advanced Safety Features

- Traffic Sign & Light Recognition
- Vulnerable Road Users Detection
- Forward Collision Warning
- Lane Departure Warning
- Intersection Situation Alerts
- Fleet Management Connectivity

Affordable After-market Solution for Fleets

VisionConnect integrates seamlessly into existing vehicles, offering a cost-effective solution to enhance fleet safety. Equipped with AI, it accurately identifies lane lines, traffic signs, and signals, significantly improving driver awareness and reaction times.