



roboGaze 

Safer roads with AI

COMPANY OVERVIEW

- Growing Automotive SW start-up focusing on eliminating road fatalities. Created in 2019, established in 2020.
- Experienced team with a proven track record in automotive R&D

PROGRESS

- Microsoft, Google, Nvidia partnerships
- Working prototype demonstrated to investors and potential customers
- 300K € investment for development (Hiventures, Intellitext, Antenna Hungária)
- Currently working on productization with Stonkam, Almotive & MOL Limo

Unit Selling Proposal:

All-around solution at affordable price which makes DMS available for cheaper cars

Go2market with a strong partner ecosystem

Let's make it together

DEVELOPMENT PARTNERS



STONKAM®



TECHNOLOGY PARTNERS



UNIVERSITY PARTNERS



REGULATION FUELS \$1,5B MARKET



1. European Commission is set to implement safety regulation by **2022** to further reduce road deaths and injuries in the EU
2. UNECE's World Forum for Harmonization of Vehicle Regulations introduced a binding regulation to implement Driver Availability Recognition System
3. The legislation will come into effect from **May 2022** for new models that haven't been designed yet and **May 2024** for new versions of models currently on the market.

PRIORITY TECHNOLOGIES THAT ETSC REQUIRES

- **Distraction and fatigue**
- **Seatbelt Reminder**
- Alcohol Interlocks (DUI)
- Seatbelt Reminder
- Intelligent Speed Assistant
- Lane Keeping Assistance
- Automated Emergency Braking
- Event Data Recorders

Gaze tracking and AI based real-time computer vision technology supports numerous use cases



OEM/Tier1 – Startup cooperation enables fast and cost-efficient implementation of regulations

DRIVING IS UNSAFE DUE TO HUMAN FACTOR

Each year, around **1.3 million people are killed**, and 50 million people are seriously injured in the world.

ROOT CAUSES

1. DISTRACTION

2. INFLUENCE OF ALCOHOL/DRUG

3. FATIGUE

4. STRONG EMOTIONS

5. FEVER

1 IN 8 TRAFFIC FATALITIES INVOLVES A TRUCK

FACTS

- Truck driving is one of the most dangerous professions in the world
- 80% of truck drivers work more than 50 hours a week; 10% work over 80 hours

AS A RESULT

- In the US, Trucker deaths have reached their highest level in the past 30 years and will continue on rising in the future
- In Australia, the cabin of a truck was reported as one of the deadliest workplaces by the National Transport Insurance company finding that 53 truck drivers died in 2019





**roboGaze uses AI
to effectively
detect physically
tired or distracted
drivers in real-time**

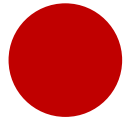
roboGaze SOLUTION



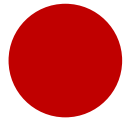
1. Face recognition and authentication
2. Multi-factor driver fatigue monitoring
3. Real-time alertness and irresponsible driver behavior detection
4. Remote monitoring platform for operators

Value for customers

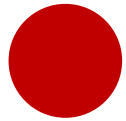
Increase road safety and reduce risk of accidents due to human error



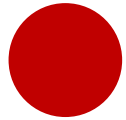
SAFETY: roboGaze gathers visual information about the driver's behavior and condition



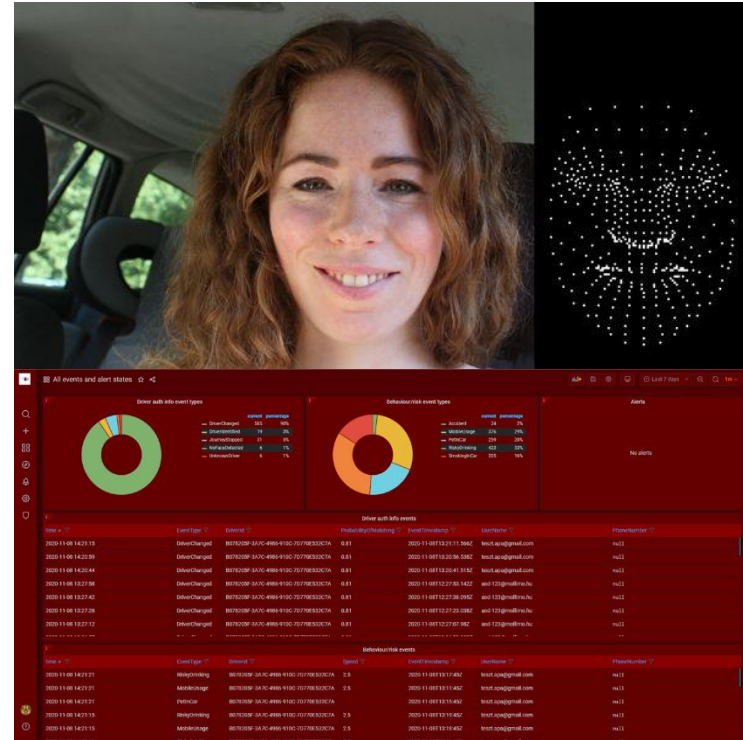
FOLLOW UP: Carefully analyzes data to identify several risky conditions and irresponsible behavior in real-time at the edge



INITIATE ALERTS: System alerts driver in order to reduce risk of accidents

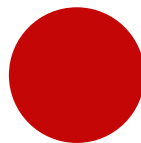
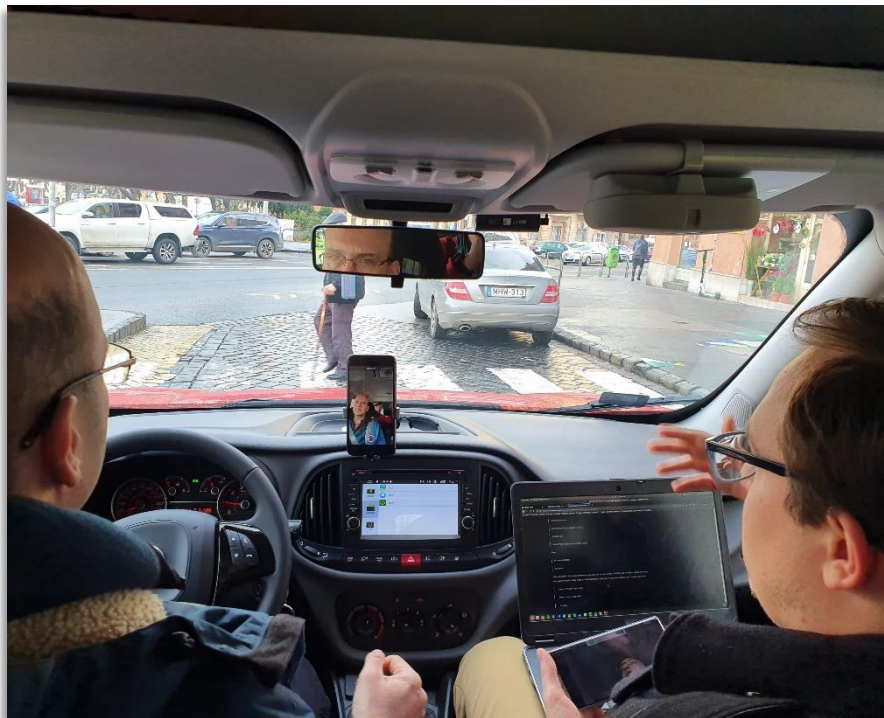


REPORTING SYSTEM: System generates report to operators about registered alerts



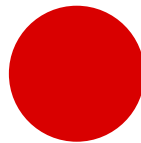
USP- Democratization of DMS

Solution accessible for all



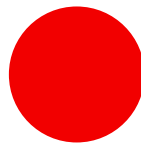
LOW COST, ONBOARD

Algorithms can operate in low resource environment
(low resolution camera, Raspberry Pi + Movidius)



FLEXIBLE PRODUCT IMPLEMENTATION

White-label solution can be co-developed
according clients' needs



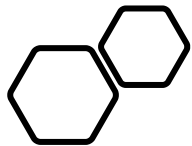
REAL-TIME

Cutting edge technology offers real-time solution
fit for IoT



AUTOMOTIVE GRADE

roboGaze platform aims to match automotive
industry standards



Factors under AI control

1. Face recognition

Identification of the driver in order to allow the vehicle to automatically restore its preferences and settings



- ✓ High precision authentication
- ✓ Works in real-time
- ✓ Works with face mask
- ✓ Uses Machine Learning algorithms
- ✓ Runs even on a Raspberry Pi

2. Monitor driver fatigue

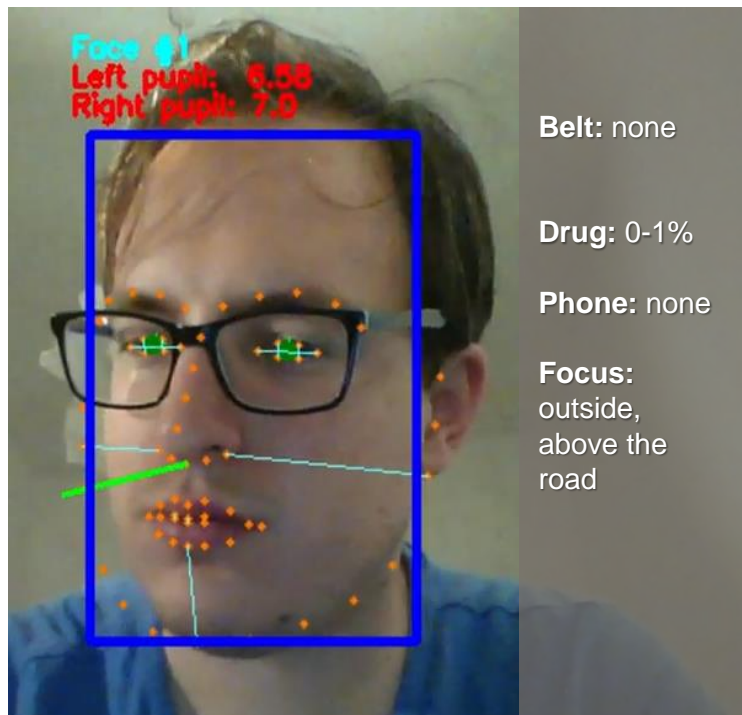
Monitor fatigue and alert driver when potential drowsiness situation is detected based on scientific research



- ✓ Eye openness, number of blinks
- ✓ Frequency of eye movements
- ✓ Yawning (mouth and/or hand movement)
- ✓ Eye rotations in a specified timeframe
- ✓ Head and upper body inclination

3. Driver alertness tracking

Ensures keeping driver's eyes focused on the road and that he/she is aware of any dangerous situation



Hands on the wheel: Measure the ratio of one-handed driving



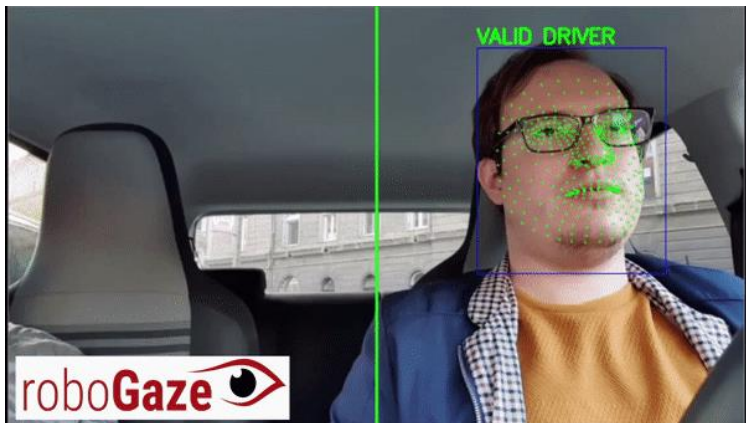
Monitor risky mobile usage



Eyes on the road: Constantly track drivers focus areas

4. Irresponsible driver behavior detection

Monitor driver's behavior to detect any dangerous situation



- ✓ Hands on the wheel: Measure the ratio of one-handed driving
- ✓ Detects if driver uses safety-belt by camera
- ✓ Detects alcohol consumption
- ✓ Monitor risky mobile usage
- ✓ Recognize if the driver is eating or drinking

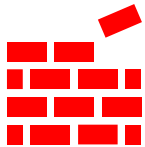
Implementation options

Hardware agnostic, **white label** application available for different needs



Standalone
customized
mobile application

Application
customized into
embedded HW (module)



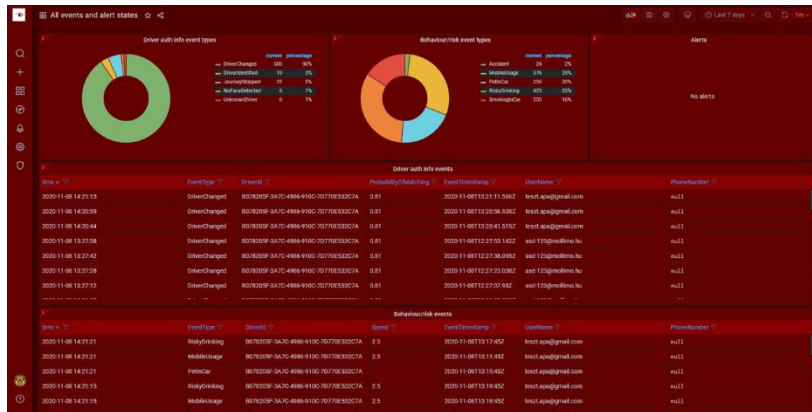
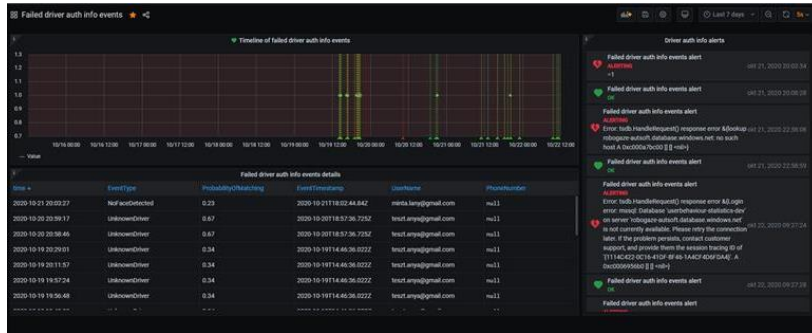
SDK integrated into Customer
existing application
(serves as an input of the
existing warning/self-driving
systems)

+ Optional for the 3 scenarios:
Cloud server-side
implementation for fleet
management



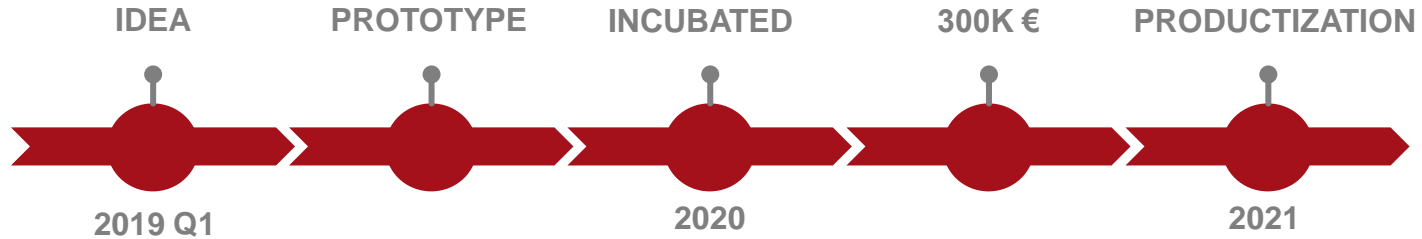
5. Remote monitoring platform for operators

Centralized data and monitoring platform offering real-time risk management for vehicle fleet operators



- ✓ Aggregated user level information enables customer trend evaluation and analysis
- ✓ Driver categorization available upon clients' requirements
- ✓ Real-time operator warning in case of hazardous high-risk during driving session
- ✓ Alert operator about prohibited objects and animals
- ✓ Additional custom reports available to meet OEM requirements

roboGaze progress and roadmap



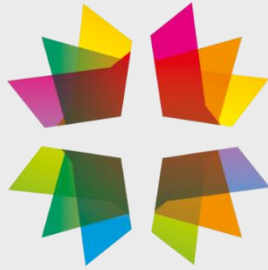
Main Focuses in 2021

Q1 2021:

- Prototypes for diverse companies (Australia, Hungary)
- Investors demos + more partnerships
- Android Reference Application
- Night driving and sunglasses detections

Q2 2021

- Safety belt detection
- Focus on partnership with OEMs and Tiers1



**CENTRAL
EUROPEAN
STARTUP
AWARDS**

roboGaze 
Safer roads with AI

roboGaze is nominated as regional finalist as:

- Best Newcomer 2020
- Best Social Impact Startup



THANK YOU FOR YOUR ATTENTION!

ANY QUESTIONS?

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