



## Mesterséges intelligencia a balesetmentes közlekedésért

Dr. Lóránd Balázs PhD – Mesterséges Intelligencia Fejlesztési Központ vezető



# For a future without accidents

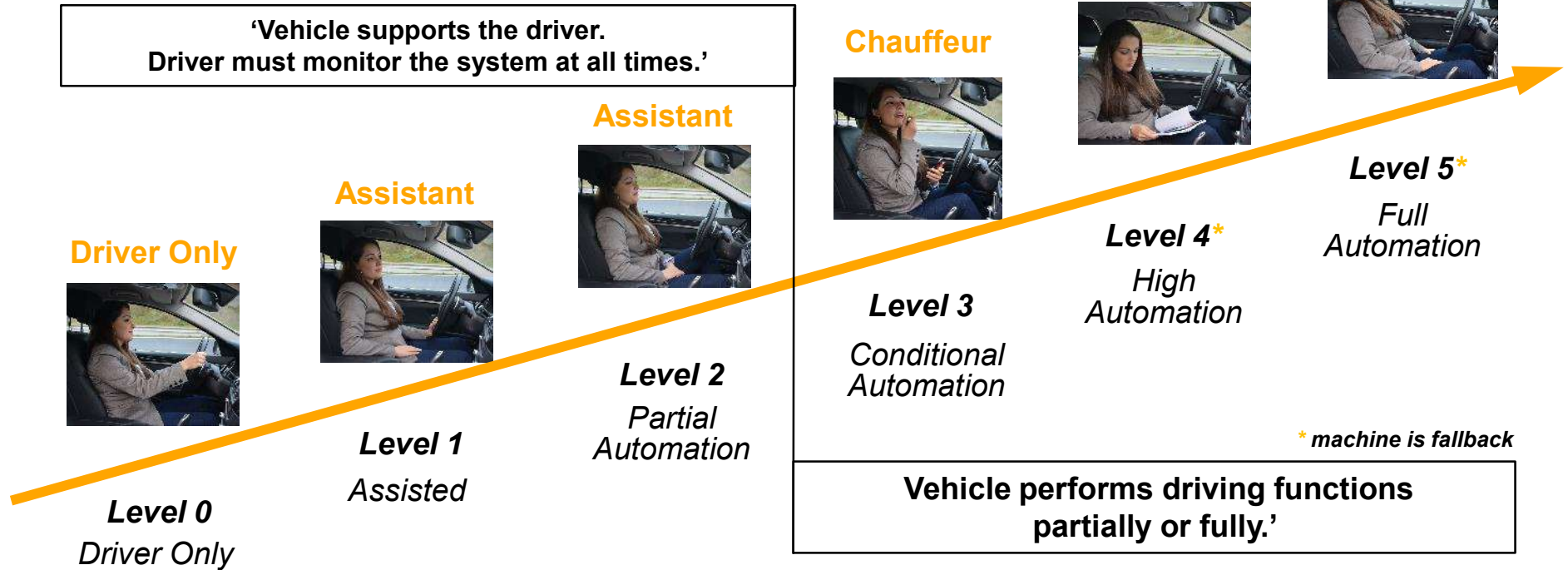
## Challenges



0 No Autonomy	1 Driver Assistance	2 Partial Autonomy	3 Conditional Automation	4 High Automation	5 Full Automation
Zero autonomy; the driver performs all driving tasks.	Vehicle is controlled by the driver, but some driving assist features may be included in the vehicle design.	Vehicle has combined automated functions, like acceleration and steering but the driver must remain engaged with the driving task and monitor the environment at all times.	Driver is not necessary but is required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.	The vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.	The vehicle is capable of performing all driving functions under all conditions. The driver may have the option to control the vehicle.

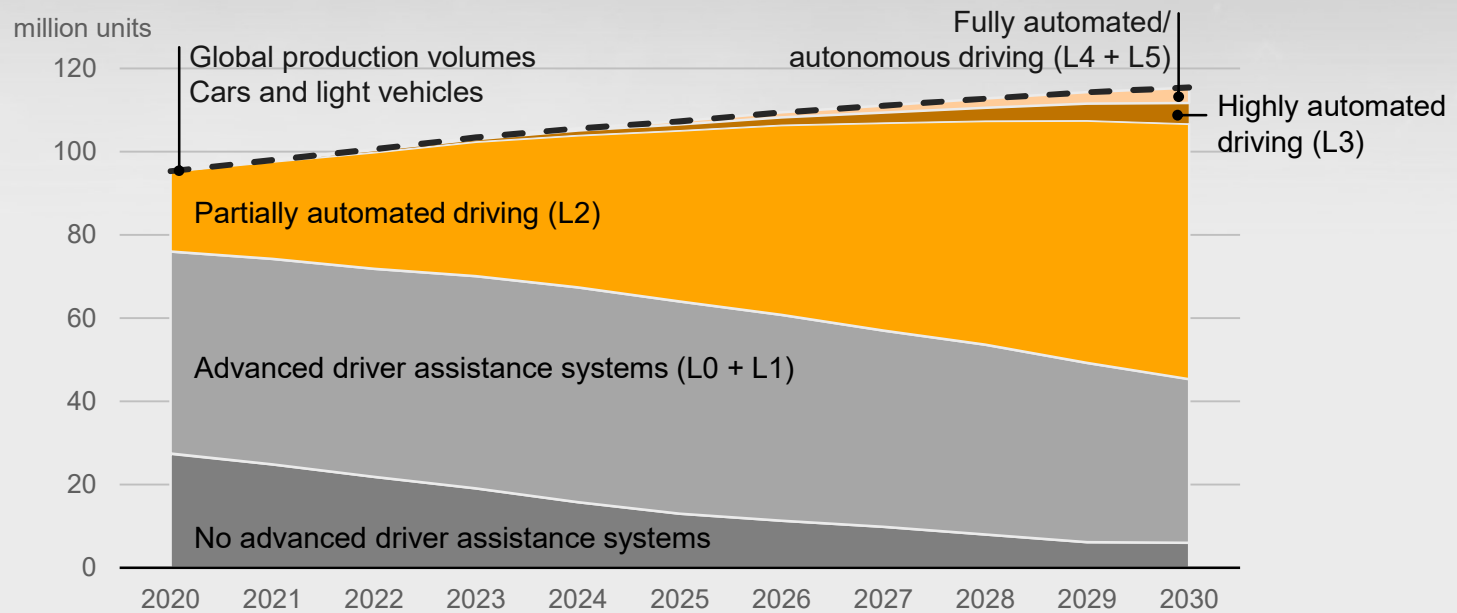


# From Assisted to Automated Driving Today at SAE3

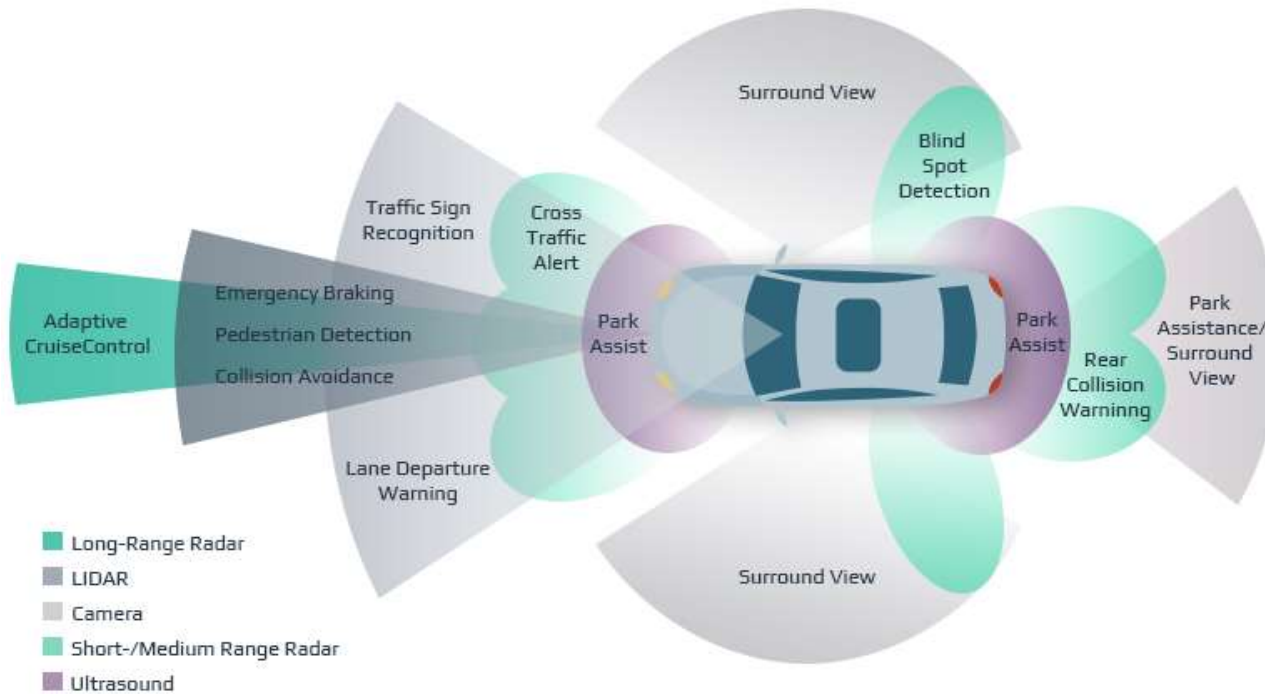


# Five Steps to Autonomous Driving

## Scenario: Market Development from Level 0 to Level 5



# How autonomus car sees the world



## RADAR

- + Precise distance measurement
- + Longitudinal velocity measurement
- + Robust in bad weather conditions
- + Good Night Performance
- Bad resolution in Lateral and Elevation

## LIDAR

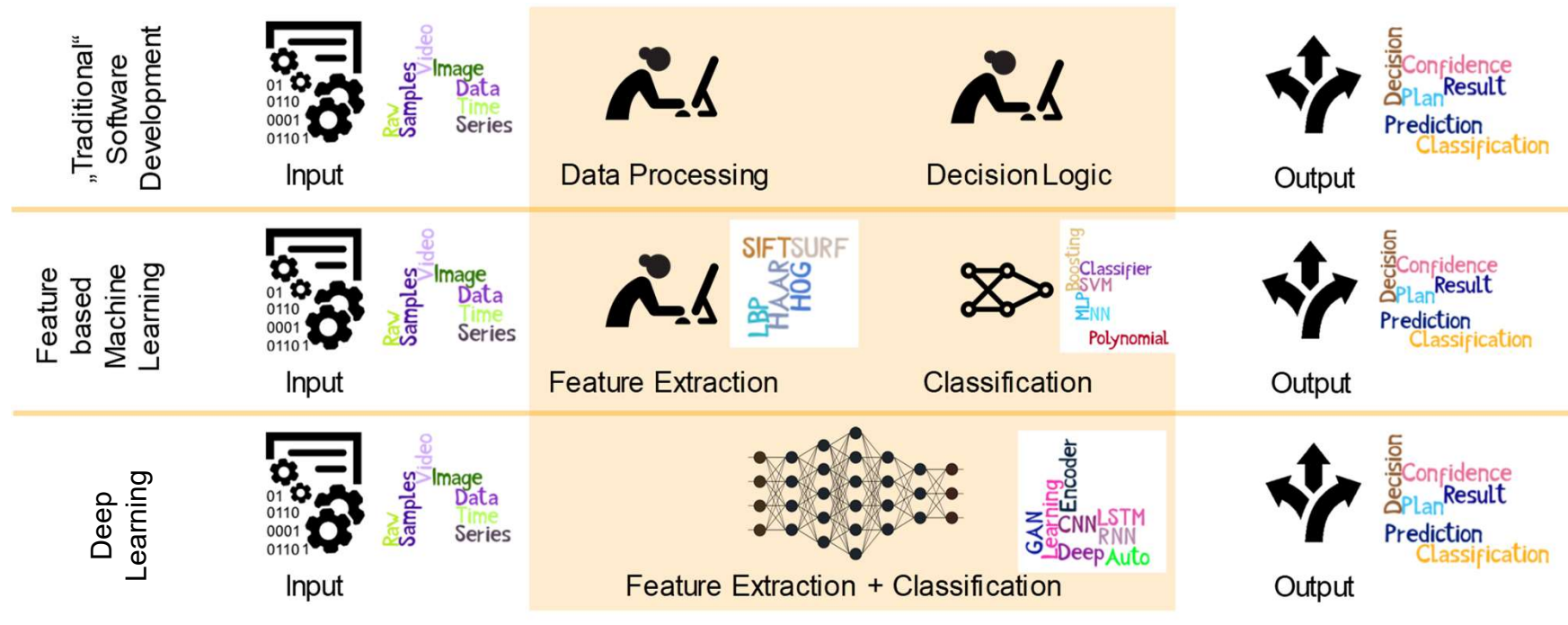
- + Precise distance measurement
- + Longitudinal velocity measurement
- Bad performance in bad weather conditions
- Bad resolution in Lateral and Elevation

## CAMERA

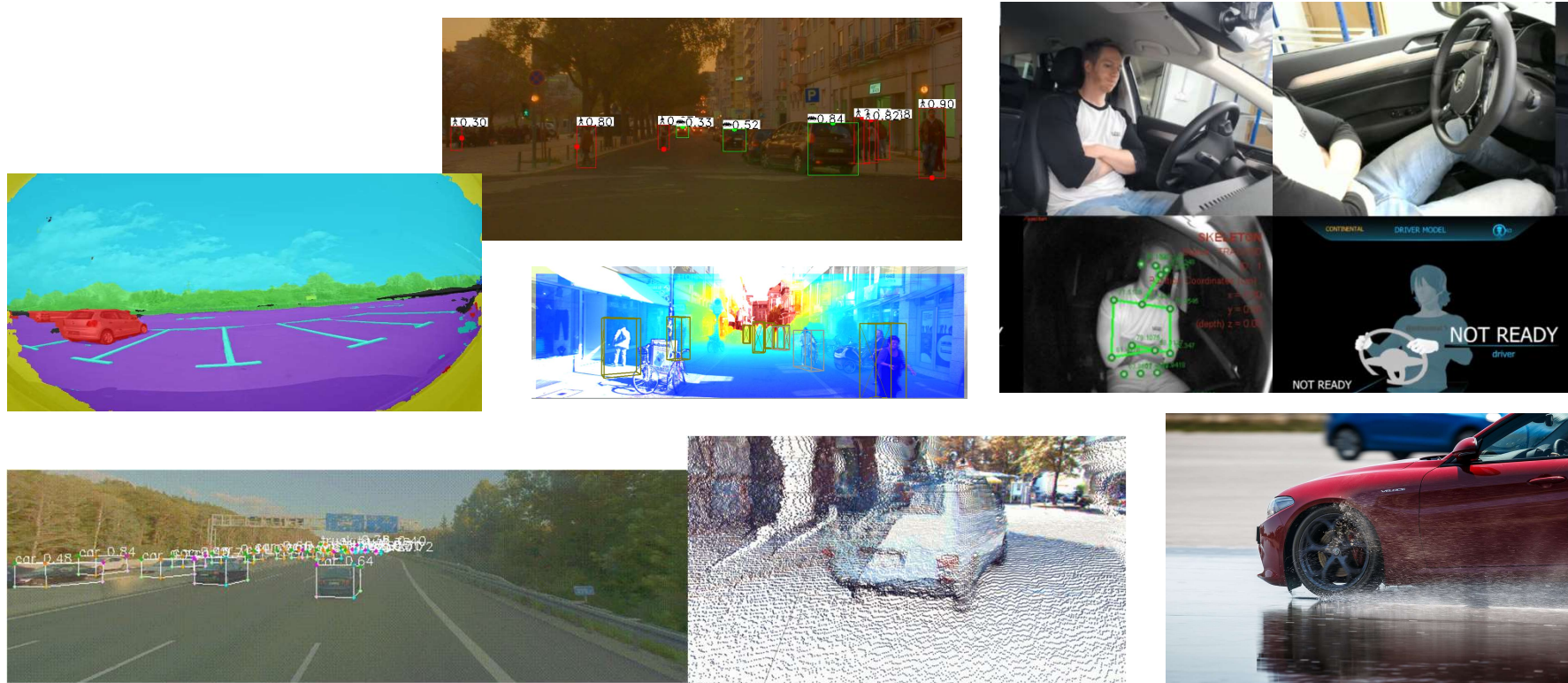
- + Specific object recognition
- + Good resolution in Lateral and Elevation
- No velocity measurement
- Bad night performance measurement
- Bad performance in bad weather conditions

# Deep Learning

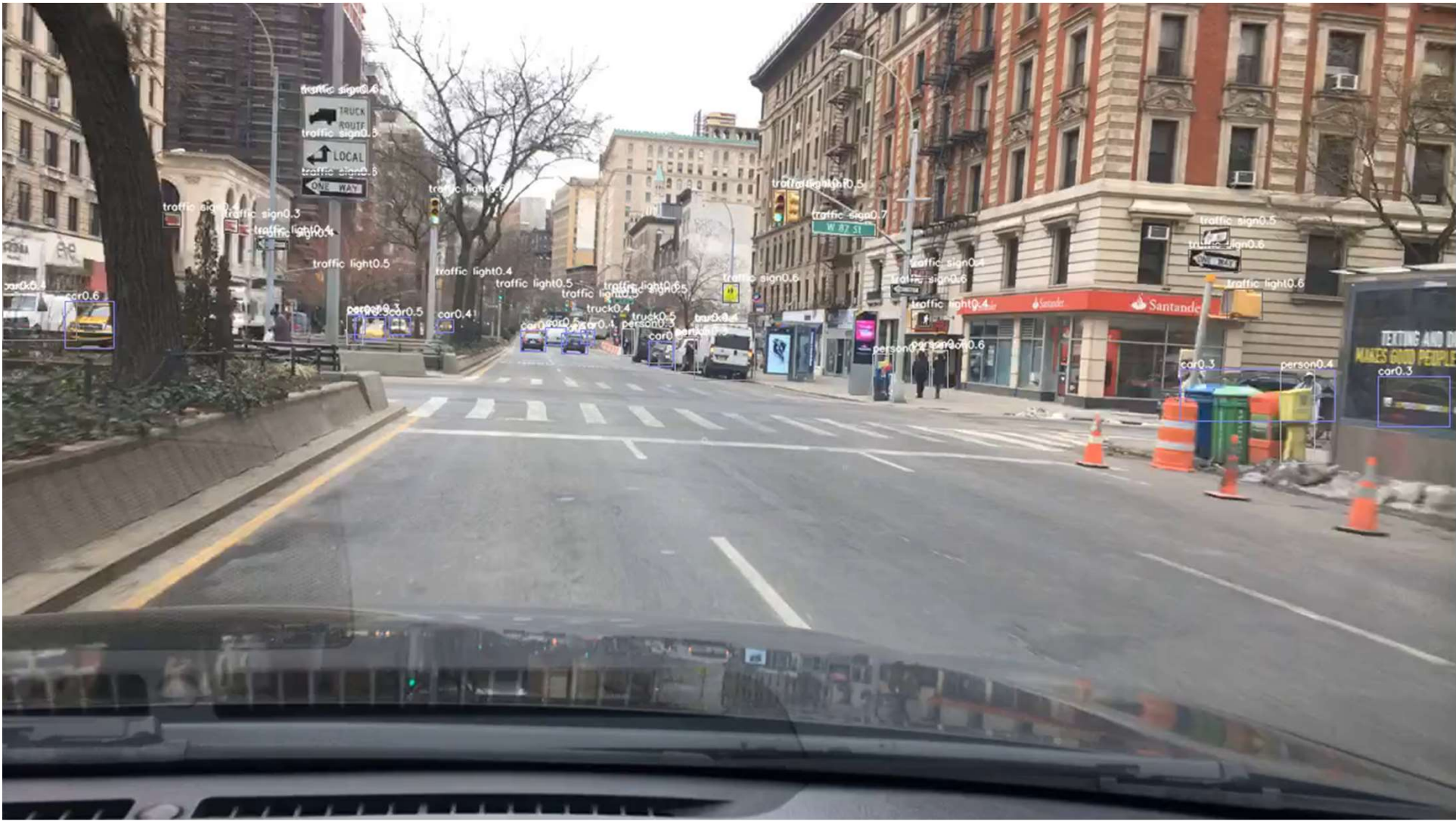
The technique to implement Artificial Intelligence



# Project portfolio overview









## ADAS Budapest – Deep Learning Competence Centre



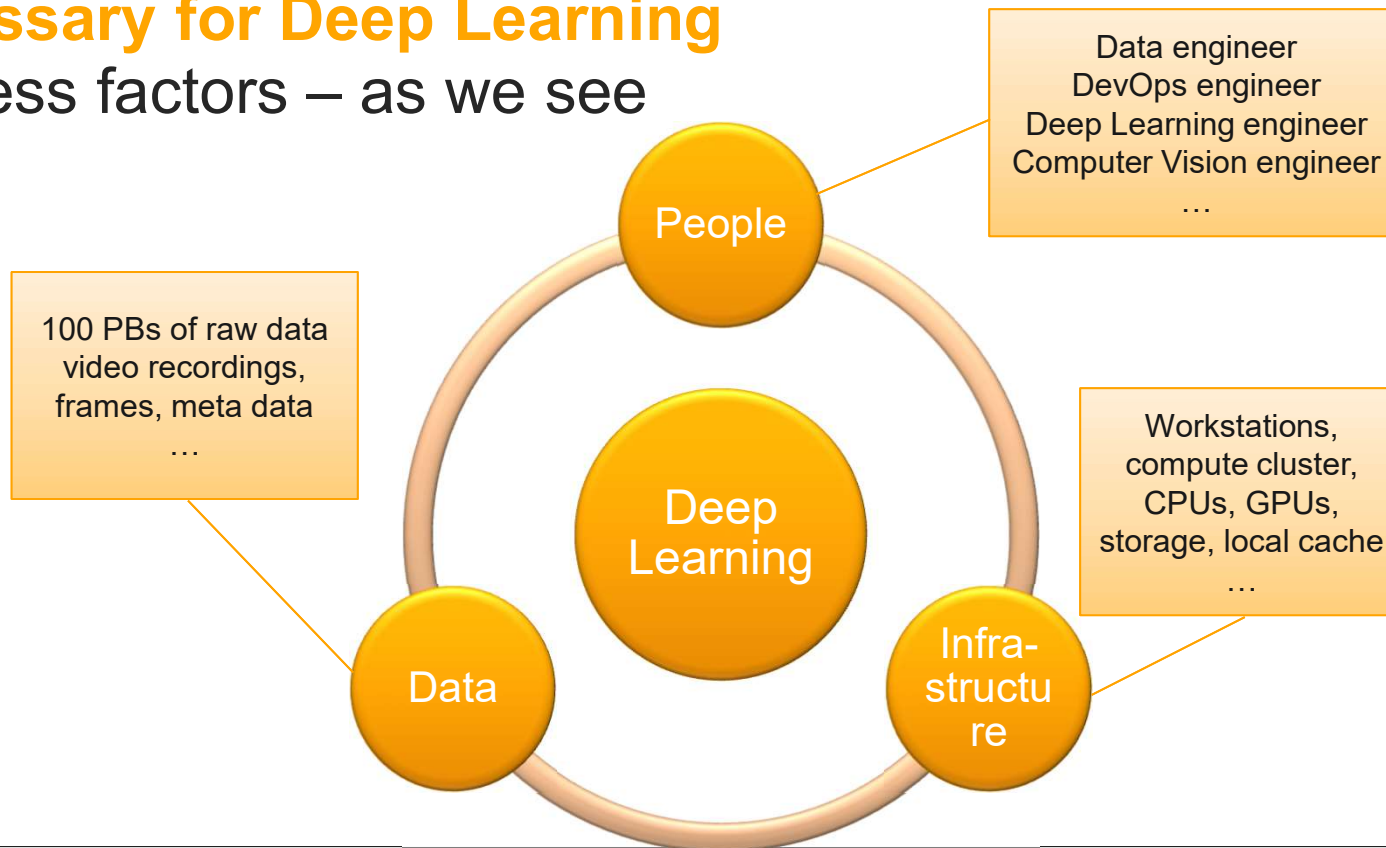
- Existing **automotive** environment
- **Universities** and research institutes
- **Critical amount** of people working on AI solution
- Strong **product focus** with end-to-end responsibilities
- **Complete ecosystem** available with enablers (data and infra)
- Different **work culture** for creativity with flexibility



“Made in Hungary” → “Invented in Hungary”

# Necessary for Deep Learning

## Success factors – as we see



## Contact us



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