

C H A N G I N G
H O W
M A C H I N E S
U N D E R
S T A N D
P E O P L E

Humanising Autonomy: How Behaviour AI is Driving the Future of Connected Vehicles

COVESA AMM

Dearborn, October 20th, 2022

Presented by:
Patricia La Torre
paddy@humanisingautonomy.com

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Agenda

3 things to cover

- What is Behaviour AI?
- Deploying Behaviour AI
- How is it “Driving the Future of Connected Vehicles?”

WHAT IS BEHAVIOUR AI?



Our daily lives are now crammed with automation, but these high levels of computer-assisted activity don't mean these machines understand our behaviours, actions and intents.

Without that human context, automation in machines can lead to accidents, increased liability rates, a lack of trust and adoption in machines and a poor user experience.

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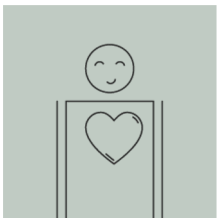
**Behaviour-based
artificial intelligence
can change how
automated technology
responds to people.**

Behaviour AI

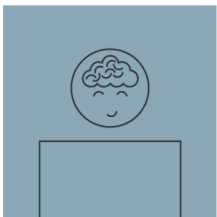
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We teach machines to understand how and why people behave to ensure any human-machine interaction is safe, efficient, pleasant and most importantly – more *human*.

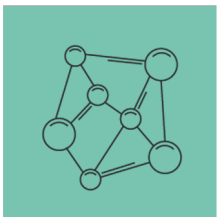
THREE PILLARS



**Human focused
computer vision**



Interpretability



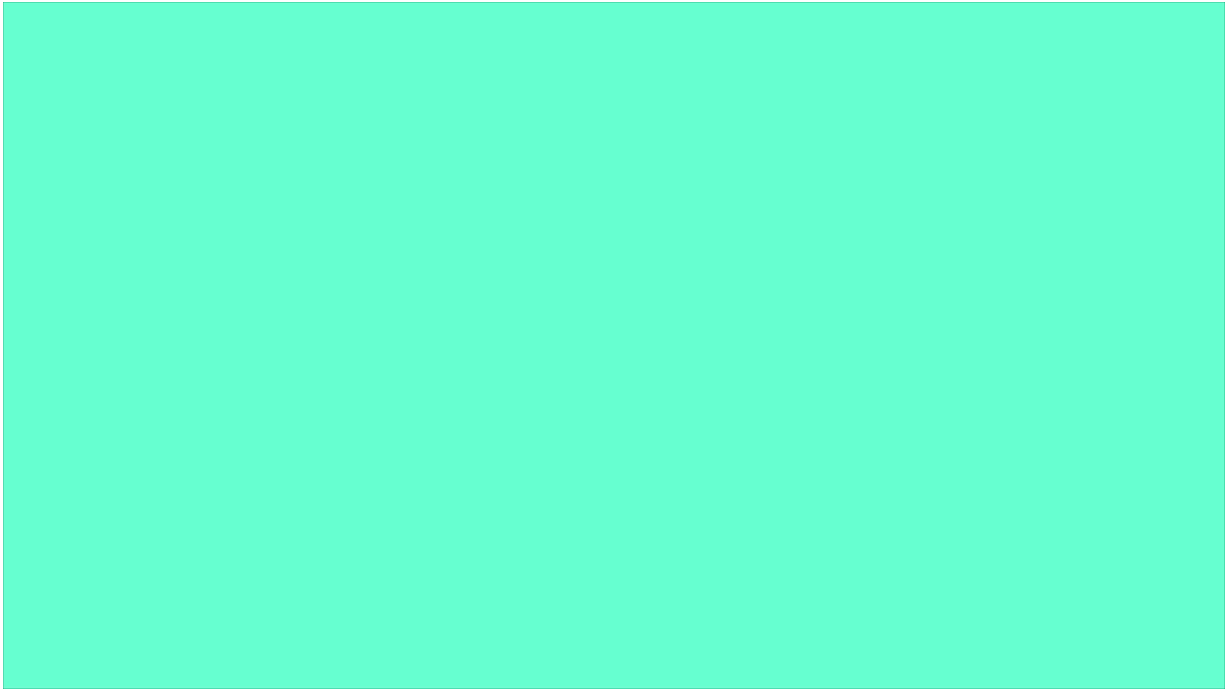
Scalability



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DEPLOYING BEHAVIOUR AI

TECHNOLOGY

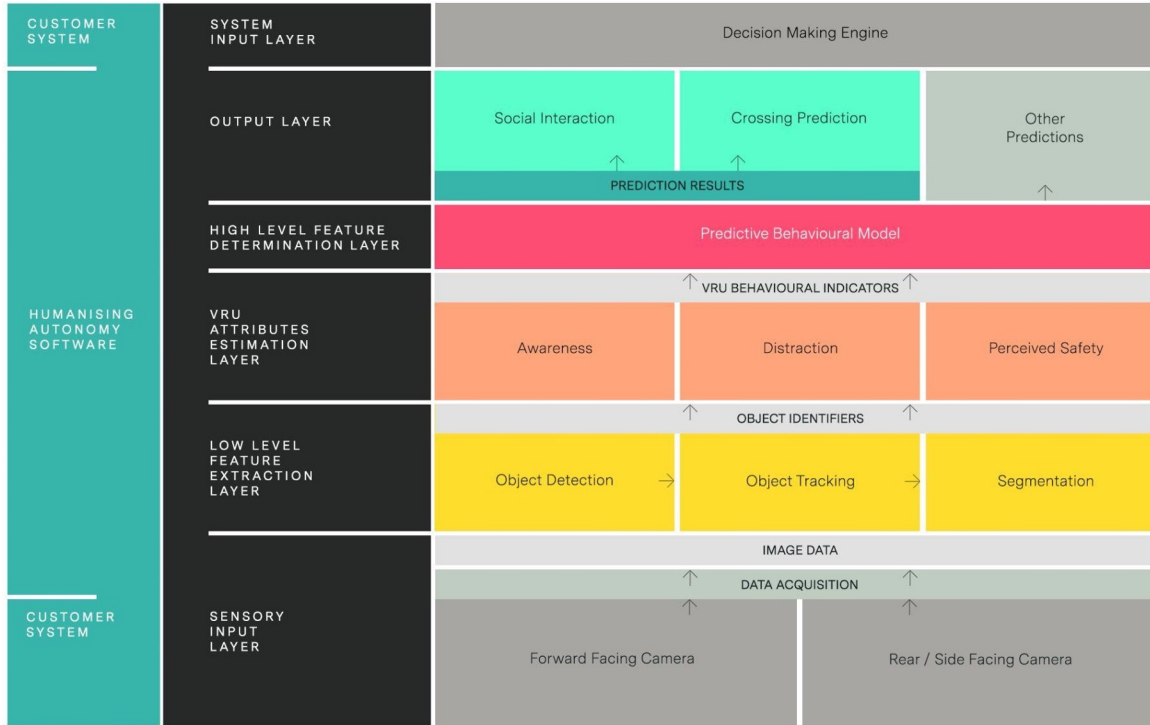


**Available as
Edge and Cloud
Technology**



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BehaviourAI architecture



Our AI Engine comprises of multiple different models and is highly modular.

Benefits of the modularity are:

- Rapidly tunable to new environments and application with small amount of new data
- Flexible and adaptable to existing customer stacks
- White box approach compliant with functional safety certification

Our models build on top of physics models (linear dynamical systems) based on position, velocity, and acceleration.

However, **our models help overcome some of the limitations of a pure physics based model** by feeding these models with key human behavioural information to help automated systems understand and react to people.

DRIVING THE FUTURE OF CONNECTED VEHICLES

Customers and partners include

ABInBev

AIRBUS



DAIMLER



Streamax



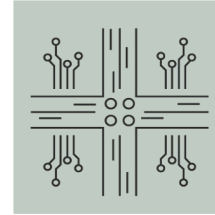
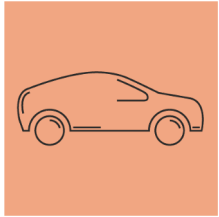
Infrastructure
market leader

Metaverse
market leader

Smart home
market leader

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Connected Everything Vision



Goal: be deployed in every camera

Deploying human-centric BehaviourAI in all connected domains:

- Connected vehicles
- Connected cities
- Connected fleets
- Connected cloud
- Etc.

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Vision Zero - Improving road safety

LAUNCHED Q3 2022



New York City, NY



Mexico City, MX



Jacksonville, FL

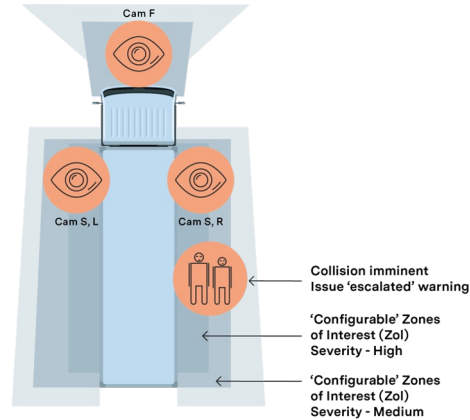
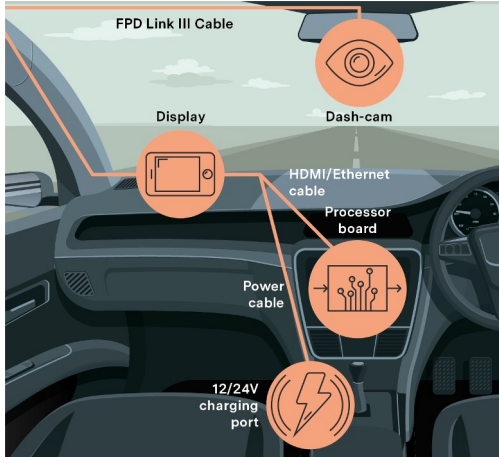


PEPSICO

New York City, NY
Guadalajara, MX



El Paso, TX



Edge

- Real time alerts

Cloud

- Video telematics

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Dashcam

NEXTBASE
Dash Cams



**LAUNCHED BY Q1 2023
(in production)**



Edge

- Forward collision warning
- Distance estimation

Cloud

- Velocity estimation
- Parking mode filter

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Autonomous driving

ON THE ROAD



Several autonomous vehicles in UK and US are driving with HA software integrated into their software stack.

Edge

- VRU intent prediction
- Intent to board

Cloud

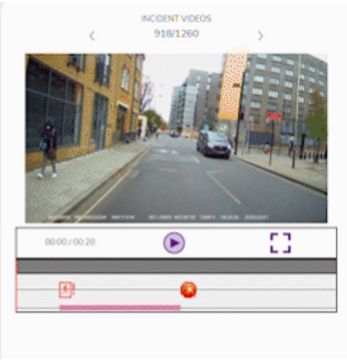
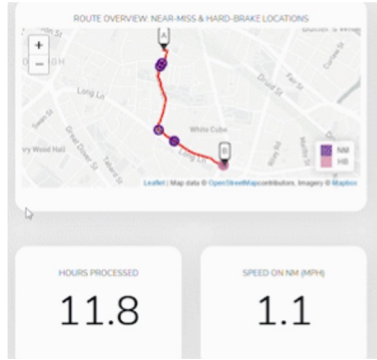
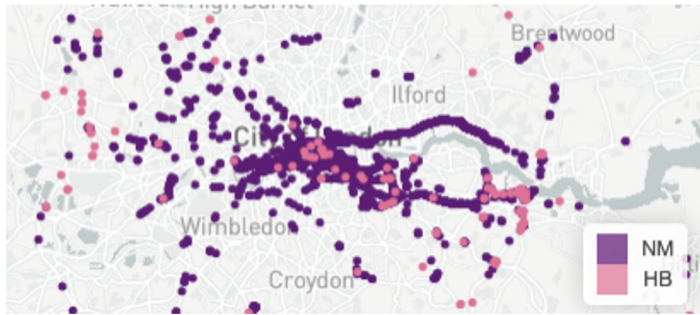
- Vehicle <> VRU encounters

Near Miss and Harsh Braking Hotspots



ON THE ROAD

OVERVIEW OF NEAR-MISS & HARD-BRAKE HOTSPOTS



Using video footage analysis to improve urban safety

Feeding into connected vehicle platforms

Project: Analysed over 1,000 hours of video footage from logistics vehicle dashcams and identified over 8,000 driving events across London

Insights example: Powered 2-wheelers are 5x more likely to cause a near miss than any other vulnerable road user category

Conclusion

Connected everything means:

- Sensor and data fusion
- Don't forget the human layer
- Collaboration is key



Get in touch to learn more!

Paddy La Torre
Head of Strategic Partnerships
paddy@humanisingautonomy.com
www.humanisingautonomy.com

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What can we do for you?

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