Keynote 1 : Towards Autonomous Vehicles : how AI is driving the mobility revolution?

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Fig. 1. Dr Benazouz Bradaï (VALEO)

Society is expecting cleaner, safer and smarter mobility. Automotive players are transforming in order to tackle those challenges. At Valeo, we make this happen with affordable, electric and smart mobility solutions.

Today, most of the new cars include ADAS "Advanced Driver Assistance Systems" features, some of them even include an Automated Driving of a Level 3 (L3) automation according to SAE classification. Valeo was a strong partner and enabler of those world first L3 vehicles. Major advancements in Automated Driving capabilities are still to come where Artificial Intelligence is a key enabler.

In this presentation we discuss the ADAS acceleration and the integration of cutting-edge AI technologies with Valeo automotive grade sensors to propel the evolution of autonomous vehicles from parking automation to advanced driving assistance and full autonomy. We will deep dive in few challenges on this evolution:

— How machine learning based perception is turning sensors inputs into useful understanding of the environment and inside the vehicle;
— How imitation and reinforcement learning are used for an efficient decision making including the prediction of other road participants like vulnerable road users;
— The end to end driving capabilities based on AI.

Finally, we will show the results of all that on Valeo Drive4U driving on open roads with only Valeo serial production sensors.