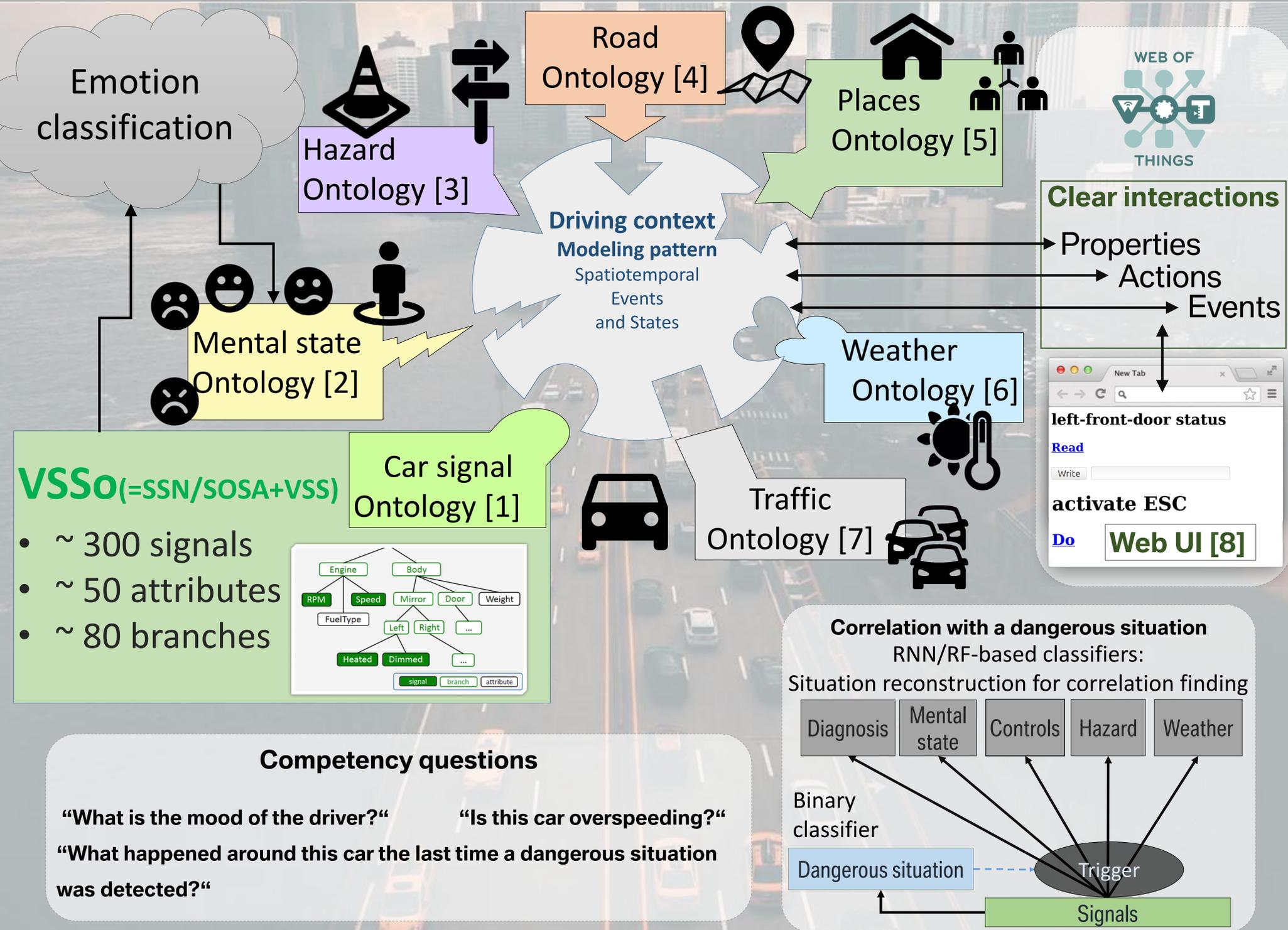


We propose a car signal ontology named VSSo that provides a formal definition of the numerous sensors embedded in car regardless of the vehicle model and brand, re-using the work made by the GENIVI alliance with the Vehicle Signal Specification (VSS). We observe that recent progress in machine learning enables to predict a number of useful information using the car signals and environmental factors such as the emotion of the driver or the detection of dangerous situation on the road. However, there is a lack of a central modeling pattern for describing the dynamic situation of a vehicle, its driver and passengers, moving in an evolving environment. We propose a driving context ontology relying on a patterns composed of events and states to glue together automotive-related vocabularies.

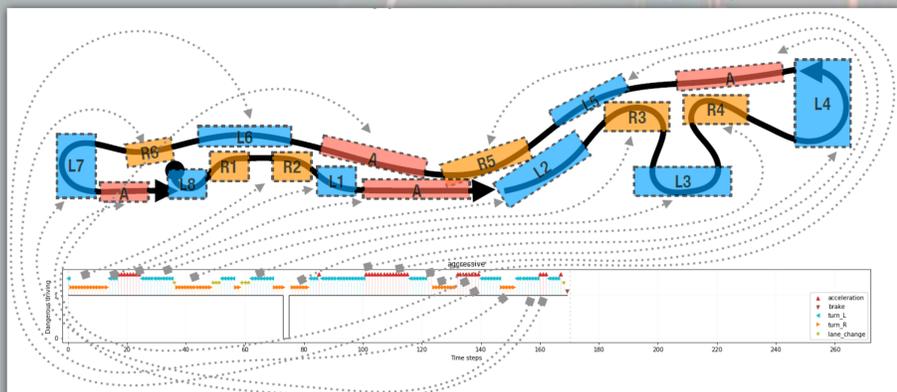
*How can a modular central modeling pattern for a driving context enable expressive interactions and complex queries?*

# A driving context ontology for making sense of cross-domain driving data



## Evaluation

- Implementation: context reconstruction with controls
- RNN and RF (mean, standard deviation, median, trend) from 9 signals, with a dataset of 183 maneuvers, from 2 drivers in dangerous situations.



## References:

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[2] <https://bioportal.bioontology.org/ontologies/MFOEM>

[3] <https://transportdisruption.github.io/>

[4] [http://ci.emse.fr/opensensingcity/ns/sca/vocabulary\\_81/](http://ci.emse.fr/opensensingcity/ns/sca/vocabulary_81/)

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[8] Benjamin Klotz, Soumya Kanti Datta, Daniel Wilms, Raphael Troncy, and Christian Bonnet. A car as a semantic web thing: Motivation and demonstration. In 2018 Global Internet of Things Summit (GloTS) (GloTS'18), Bilbao, Spain, June 2018.