

## **Parallel Learning Theory and Its Applications on Automated Vehicles**

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We propose a new framework of machine learning theory, parallel learning, which incorporates and inherits many elements from various existing machine learning theories. Special designs are also presented to deal with some important problems in the machine learning research field, e.g., useful data retrieval from big data using software-defined artificial systems, combination of predictive learning and prescriptive learning to finish some difficult tasks. We apply parallel learning to a number of design problems in automated vehicle design, including parking planning like humans, mastering general human driving behaviors, and generating virtual training/testing scenarios for automated vehicles.