



## **Deep learning at the service of the industry 4.0**

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With the rise of industry 4.0, simulation has shifted from being a validation tool of mature designs into a means of exploration of product design space. The growth of high-performance computing infrastructure and the progress in high-fidelity simulation methods have certainly contributed to numerical simulation being key in the reduction of physical testing and product performance improvement. As organizations are trying to include simulations along the product lifecycle (from early design until product decommissioning), the availability of simulation experts compared to the number of design tasks and iterations have become a major operational challenge.

The spread of cloud services offers a virtually centralized place where companies can store and process data gathered about a given design or a given product. This additional knowledge about the product design and device life opens the door of design optimization and real-time product monitoring.

Industry 4.0 partially relies on big data, simulation and cloud computing. This talk showcases the upcoming challenges in the articulation of these concepts. We also explain how a new generation of Deep-Learning based software makes it possible to shortcut any simulation chain with a predictive model that outputs post-processed results. The development steps of these models and their integration within the product lifecycle are exposed.