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An Introduction to Bayesian Deep Learning

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Bayesian Deep Learning (BDL) fills an important gap in the current deep neural networks, no matter powerful they are: in figurative terms, one could say BDL gives to AI the introspective ability to assess its own level of ignorance due to a lack of observations.
In more technical terms, BDL adopts the view of Bayesian statistics by replacing the weights of neural networks by distributions.
While this idea is nothing new, BDL has recently undergone new developments, thanks in particular to the seminal work of Y. Gal.
This presentation is designed to be a gentle introduction of the main concepts of BDL.
It introduces the required notions of Deep Learning and Bayesian statistics before developing the BDL framework.
It will not assume any particular piece of knowledge, but some general notions in machine Learning and Neural Networks.

Auteur principal: PENNERATH, Frédéric (CentraleSupélec)

Orateur: PENNERATH, Frédéric (CentraleSupélec)

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