Séminaire de Probabilités et Statistique

Mardi 28 septembre à 14h00
Salle Fizeau (5ème étage)

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Hyper-Parameter Selection by Algorithmic Differentiation

Setting regularization (hyper-)parameters for variational estimators in imaging or machine learning is notoriously difficult. Grid-search requires to choose a predefined grid of parameters and scales exponentially in the number of parameters which can be quickly inconvenient or even impossible in imaging. Another class of approaches casts hyperparameter optimization as a bi-level optimization problem, typically solved by gradient descent. A key challenge for these approaches is the estimation of the gradient w.r.t. the hyperparameters. In this presentation, I will show how algorithmic/automatic differentiation can help to overcome this challenge, both for inverse problems with a differentiable Stein Unbiased Risk Estimator and in regression using held-out loss.