Apprentissage statistique

ECTS : 3

Volume horaire : 21

Description du contenu de l'enseignement :

1. **Supervised Learning**: Bayes decision rule, Consistency and no free lunch theorem, Hypothesis class,Probably Approximately Correct (PAC) framework. Empirical Risk Minimization (ERM), PA Cbounds with ERM
2. **Concentration Inequalities** : Chebyshev's inequality,Hoeffding's inequality,Sub-Gaussian random variables, Concentrations of functions of random variables,Bernstein's deviation inequality,Deviation inequality for quadratic forms
3. **Generalization Bounds via Uniform Convergence**: Finite hypothesis class, Bounds for infinite hypothesis class via discretization, Rademacher complexity (RC), Empirical RC,
4. **Bounding the Rademacher complexity**: Shattering numbers, VC theory, Covering number, entropy, Dudley's chaining

Compétence à acquérir :

L'objectif du cours est d'acquérir des notions théoriques d'apprentissage statistique.

Mode de contrôle des connaissances :

Examen final.