



Working Group on Statistical Learning Seminar

Title: Nonparametric density estimation over complicated domains and manifolds

Speaker: Federico Ferraccioli (University of Padua)

Date: Mon 15th February 2021 at 12:00PM

Location: Online

Abstract: The topic of this seminar is a nonparametric method for density estimation over (possibly complicated) multidimensional domains. The method combines a likelihood approach with a regularization based on a differential operator. The estimation procedure is based on advanced numerical techniques, and in particular makes use of finite elements. This ensures high computational efficiency and enables great flexibility. The proposed method efficiently deals with data scattered over regions having complicated shapes, featuring complex boundaries, sharp concavities or holes, or data scattered over curved domains, such as Riemannian manifolds. Moreover, it captures very well complicated signals having multiple modes with different directions and intensities of anisotropy.

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