Lunedì 23 marzo ore 15.30

Aula Seminari – Dipartimento di Matematica

**Rank-based transcriptional signatures: a novel approach to biomarker discovery.**

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**Abstract:**
A long standing problem in molecular biology is the accurate classification of biological samples based on their gene expression profiles. A robust solution to such problem would have important implications in the development of personalized medicine applications such as diagnosis, prognosis and therapy management based on an individual’s own transcriptional data. In this talk we will describe a novel approach to the definition of transcriptional biomarkers which is based on the identification and analysis of subject-specific rank-based signatures.

Our approach represents a radical departure from current classification methods and has a number of features that make it inherently robust to unwanted signals affecting transcriptional data. We will present the results obtained in the course of an open international competition by our approach against those of current state-of-the-art classification methods. Finally we will show some representative applications based on real data and discuss possible further improvements of our approach.

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