ASONAM 2020 Keynotes

ASONAM 2020 Keynote I

Marta Sales-Pardo
(Springer - SNAM Journal Keynote)
Associate Professor, Departament d'Engineyria Química at Universitat Rovira i Virgili

Abstract

I will talk about two different problems that share a common behavior: a transition between a desired outcome inference and a less desirable one. My first example will be that of recommendation systems (or bipartite graphs with multi-valued edges) and the use of attributes (such as gender of a user and the genre of a movie) to increase prediction accuracy, My second example will be that of obtaining models from data using a Bayesian inference framework in the presence of noise. I will discuss how data attributes are not always useful to make recommendations in the same way that increasing the noise in the data will prevent us from finding the model that generated the data. I will also discuss that if we increase the importance of the attributes or the noise we observe a transition between a regime in which we only see the data and a regime in which we only see the attributes or models that are compatible with noise.

ASONAM 2020 Keynote II

Joahn Suykens
KU Leuven, ESAT-Stadius and Leuven.AI Institute

Abstract

Kernel machines are powerful models in machine learning and data-driven modelling. In this talk we discuss how methods of spectral clustering for community detection can be conceived within a model-based framework of least squares support vector machines. This has advantages for model selection, working with representative subsets and sparse representations for large scale networks, multilevel hierarchical clustering and semi-supervised learning. Recently such models have also been extended for generative modelling through new representations of generative restricted kernel machines

ASONAM 2020 Keynote III

Daniela Paolotti
Senior Research Scientist, ISI Foundation

Abstract

Public health and population health deal with the study of daily life issues that affect the health of populations and the prevention efforts to improve these issues. Novel data sources and methodologies, i.e. outside of traditional "healthcare" settings can help shed a light on aspects that are otherwise difficult to study. In this respect, network science and social media data have strongly impacted the way we study the health of populations. This is pertinent for both infectious diseases such as flu or COVID-19 and non-communicable diseases such as diabetes, obesity, etc. In this talk, we will try to explore the relevance of network science and social media to answer questions around disease incidence as well as around the social factors impacting prevention and mitigation with a special focus on vaccine hesitancy.