

ATENEO



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Space-time statistical models for Covid and crime data

Abstract: We present several statistical approaches to understand the underlying temporal and spatial dynamics of both covid and crime data that can result in informed and timely public health and security policies.

For covid data, we first consider a spatio-temporal stochastic model to explain the temporal and spatial variations in the daily number of new confirmed cases, and propose a spatio-temporal stochastic modeling approach that is able to account for the spatial, temporal and interactions effects, together with possible deterministic covariates. We also consider a small area spatio-temporal modelling proposal of Covid incidence data with the idea of developing advanced surveillance tools that allow monitoring the disease at lower disaggregation levels. Human movement data is also taken into account.

For crime data, we propose models to detect generators of crime in cities together with spatio-temporal crime risk prediction. We consider network data and ways to reduce the dimensionality of spatio-temporal data. Comments on using machine learning methods in crime data will close this second part.

Nota: La capacidad de la Sala de Grados está limitada a 13 personas. Para asistencia presencial se ruega confirmación en la dirección bcano@uva.es. La conferencia se podrá seguir online en

<https://teams.microsoft.com/l/meetup-join/19%3a058a50eb876847918f2245435535992e%40thread.tacv2/1617793711539?context=%7b%22Tid%22%3a%225f2a1fdf-b755-40df-8d23-5c8d19455375%22%2c%22Oid%22%3a%222b25a16b-97c7-4ba5-91fb-301c759828f3%22%7d>

Sala de Grados I, Facultad de Ciencias
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