Title: Working out the control from the response, in the context of differential equations driven by rough paths.
Supervisor: Dr Anastasia Papavasiliou (Statistics)

Description:

Differential equations driven by rough paths generalise stochastic differential equations in that they allow one to replace Brownian motion (the "noise" or the "control") by any type of noise (for example, fractional Brownian motion). As such, they can be freed from some of the consequences of the noise being Brownian motion, as for example Markovianity or finite Quadratic Variation. However, this freedom of choosing the noise also comes with the issue of which noise is right. In this project, the goal will be to study methods for extracting the noise given the output from the system and analysing its statistics.