DS-GA 3001.001 Special Topics in Data Science: Modeling Time Series

Proposal due on 2/27 (midnight)

The final project should be done in groups of 2 registered students (no exceptions unless you have explicitly cleared this with me first).

- The final project can take any of the following forms:

    1. In-depth review of some recent papers related to time series topics either covered in the lecture (e.g. generalizations of LDS, HMMs) or not (e.g. RNNs and other deep learning variants).

    2. high quality software implementation of algorithms related to the class that are currently not publicly available, to be released for public usage.

    3. Application of a machine learning model to a previously unconsidered dataset and to a specific scientific question. For this: find some interesting (for you) data. Keep in mind the issue of stationarity (if raw data is not stationary, then you will need to do some preprocessing so that the assumption holds at least approximately). Make sure you have enough datapoints to be able to fit a reasonable model (the more parameters, the more data you'll need).

    4. Extension to existing method, or theoretical analysis of existing algorithm. This would likely have a scope outside the course, e.g. it could be the starting point for a longer research project.

Proposal:

Write a ~1 page proposal that details the question you are planning to address, which dataset are you planning to use, the family of algorithms used for the analysis, and how you plan to evaluate these methods. The goal is to check that you do have a plan, so add whatever details you have already worked out that may be relevant (within the space limits). Email the proposal to Artie (ys1001@nyu.edu) and cc me (csavin@nyu.edu). We plan to provide some constructive feedback for each proposal before spring break.