Advanced ML Class - Final Project

April 30, 2017

The final project should be a small-scale research project in machine learning. Here are a few high level points to consider when choosing a project.

- Topic: As a general guideline, the topic should be related to what has been taught in the course. This is not restricted to things we have already seen, but can be topics to be learned later in class like reinforcement learning, unsupervised deep learning, and generalization bounds. A natural choice is to consider a prediction problem where the label is multivariate (e.g., semantic segmentation in vision, video annotation, semantic parsing or other text annotation problems, mapping music to notes) and use graphical models for the prediction. But any other RL or challenging unsupervised problem is ok.

- Group size: Projects are to be carried out in groups of three. Smaller groups are not possible, as it will not be possible to advise so many projects. Also, this will let you tackle more challenging problems and applications.

- End-product: The outcome of the project should be a paper describing what you did. Including: motivation and related work, your specific approach, technical details and empirical results. Length should be four pages. Have a look at conference papers like NIPS and ICML to get an idea what ML papers look like.

- Scope: Since there is limited time you can allocate to working on the project, it is not expected to be on the level of conference papers. But, you should aim for something that is 60% conference paper in terms of scope.

- Grade: The grade will reflect aspects of the work such as: originality, execution quality and presentation. Precise criteria will be published to facilitate a more transparent process.

- Timeline: By May 20th you should have an approved project topic with a one page proposal describing the background, your idea, and

what you plan to achieve. Before that you should get in touch with me to confirm that you topic is ok. On the final lesson in the course we will have brief project presentations where you describe to class what you plan to do. The final date for submission of your paper will be September 10th.