CS-GY 9223 / Fall 2020

Course project

Proposal due: Sept 30

There will be no final exam in CS-GY 9223. Instead, 40% of your total grade will depend on satisfactory completion of a semester-long {course project}. Projects are conducted in teams of one (1) or two (2) students. (Solo is fine, but I would strongly encourage groups of 2.)

The project is open-ended in scope and duration. The only criterion is that it should involve design and/or analysis and/or implementation of deep learning. Templates for projects may include:

(i) learning about a new deep learning technique (beyond what is covered in class or homework); reading up prior work on that technique; implementing it; and evaluating on representative real-world datasets; or

(ii) focusing on a specific data analytics problem, and developing a deep learning based approach to solve that problem that achieves competitive performance (measured, say, in terms of metrics published in a paper, on a Kaggle leaderboard); or

(iii) extending the results of a research paper in a novel manner; or

(iv) doing a deep-dive into theoretical/algorithmic aspects of deep learning.

Deliverable 1: Project proposal

The *Project proposal* will carry 5% of your overall class grade. The proposal should be no more than 1 page long (including any references). Contents should include:

- the names of all team member(s),
- a tentative title
- a rough problem statement, no more than a paragraph
- a preliminary literature survey, no more than 2-3 references,
- what you intend to achieve at the end of the project, no more than a paragraph.

Proposals should be uploaded in PDF form on Gradescope. If there are multiple team members, then *each* of you should upload the *same* proposal document on Gradescope.

The goals of the project proposal is to: a) get you to start thinking about your project, and b) give you feedback. I will go over all project proposals, and provide feedback to you within a week.

Most likely, your proposal is great – in which case the feedback will be short. In the event that your proposal is either overly ambitious (e.g. "I will train an NLP model that will beat GPT-3") or too simple (e.g. "I will train a classifier to recognize MNIST handwritten digits") then I will point this out and we can schedule a short Zoom call to discuss further.

In either case, please start thinking about the next stage (Project plan) which will be due in mid-late October. There, you will be asked to provide a much more detailed roadmap (details of the problem, dataset specifics, expected outcomes, etc).