

COMP 441: Large Scale Machine Learning



Rice University

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- Instructor : Anshumali Shrivastava
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- Class Timing: Monday/Wednesday/Friday 11am to 11:50am
- Class Location : AEL B209
- Office Hours : Monday and Wednesday 11:50am to 12:30am ,
Duncan Hall 3118
- Website: http://www.cs.rice.edu/~as143/COMP441_Spring16/index.html
- Piazza: <https://piazza.com/class#fall2016/comp441>

Grading Total (105%)



- Project 50%
- 5 bi-weekly assignments (Best 4 will be considered) 25%
- 2 Quizzes 15%
- 2 Scribes 10%
- Participation and Discussion Forums 5%

- Individual Projects (with permission can make a group of at max 2).
- Proposals Due: 15th Feb.
- Midterm Presentation with Report: 14th March
- Final Presentation: 22nd April
- Final Reports Due: 1st May

Ideal Possibilities (any of the following)

- Improvement over state-of-art with publishable benchmarks.
- A publicly releasable code for a common machine learning task (usually distributed implementation). (Make a startup out of it)
- New theoretical insights or analysis.
- Promise on a new problem (usually with new data).
- A thorough empirical comparison report of at least 5-10 methods on 5-10 different problems.
- Ideally publishable in ICML, NIPS, KDD, etc.

Most Important Component of Class, Start Now!

Assignments

- 5 bi-weekly assignments. Due on Friday in Class.
- Best 4 will be counted.

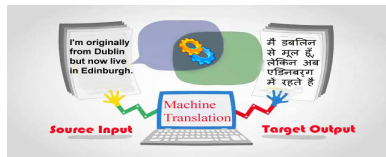
Scribes

- Each student will scribe 2 lectures.
- Choose dates soon. Need a volunteer for the next class.
- LaTeX template on Website.

Exams

- 2 in Class Quizzes.
- No Finals.
- No mid-terms.

- How can we predict structures, like machine translation or compound structure?



- How to deal with massive Graphs ?



- Many More.

What we will try to cover.



- Sketching and Streaming.
- Hashing and Randomized Algorithms.
- Optimization for Big-Data.
- Ensemble Classification.
- Kernels.
- Structured Prediction.
- Graphical Models and Variational Inference.
- Recommender Systems.
- Mining Massive Graphs.
- Deep Learning.
- Online Learning and Multi Arm Bandits.
- Distributed Machine Learning.

Next : Some Probability