

CS 7180: Special Topics in Artificial Intelligence

Instructor: Prof. Lu Wang

www.ccs.neu.edu/home/luwang

Email: luwang@ccs.neu.edu

Time and Location

- **Time:** Wednesdays and Fridays from 11:45 am - 1:25 pm
- **Location:** Richards Hall 233
- You can bring lunch!

Why this course?

- From the instructor
 - Not only about what natural language processing or machine learning research work looks like
 - But also on how to really do some cool research

Philosophy

- Hands-on experience is very necessary in this course!

Your turn!

- Tell us about yourself!
 - Who are you?
 - What research are you interested in?
 - What do you want to learn from this course?

Format of the Course

- Presenting research papers and leading discussions
 - What do you think of the paper?
 - Is the approach solid? Are the results convincing?
 - Is there anything you like or dislike?
 - For the parts you dislike, what will you do for improvement?
- Research project

Grading

- Presentation and discussion leading: 20%
- Discussion participation: 20%
- Project: 60%:
 - Presentations: 10% * 3
 - Reports: 10% * 3

Topics

- Sentiment analysis
- Text summarization
- Information extraction
- NLP for social media
- Representation learning
- Deep learning for NLP

Projects

- Choosing a research question
 - Why it's important?
 - Why existing work is not good enough?
 - Why your idea is brilliant?
 - Can it be published at top-tier conferences? E.g. ACL, NAACL, SIGIR, WWW, KDD...
- How to evaluate?
 - Dataset(s): is there existing dataset(s) or you need to get it by yourselves
 - Evaluation metrics

Projects

- Team: 1 or 2 people
- Open source software: ok
- Prerequisites
 - Being able to write code in some programming languages proficiently.
 - Finishing at least one course in natural language processing, machine learning, information retrieval, or any relevant subfield of artificial intelligence.

Projects

- Three presentations + three reports
 - Proposal
 - What do you want to do? Why this is important? What is related work? Why do you think this is a publishable idea? What dataset(s) can be used? How do you evaluate?
 - Progress
 - What have you done? Positive results vs. negative results.
 - Final
 - A publishable paper

Project Ideas

- Picking an NLP research area:
 - Sentiment analysis
 - Text summarization
 - Information extraction
 - NLP for social media
 - Representation learning
 - Deep learning for NLP
- Finding an interdisciplinary task between NLP and your research

TODO

- Due: Sep 11th, 11:45am (before class)
- Who should submit
 - Students that are interested in enrolling or auditing the course
- To whom
 - Instructor: Lu Wang (luwang@ccs.neu.edu)

TODO

- Name and contact (email)
- Are you enrolled in or going to enroll in or going to audit the course? If you want to audit the course, do you want to do the project?
- Are you a PhD or master student? And which year are you in?
- Are you doing research with any professor(s)? And which projects are you working on?

TODO

- What are your goals for taking this course?
- What kind of projects do you want to do?
(rough ideas are okay)

Next Class

- Sentiment Analysis
 - Sarcasm as Contrast between a Positive Sentiment and Negative Situation, by Riloff et al., EMNLP 2013
 - Open Domain Targeted Sentiment, by Mitchell et al., EMNLP 2013
 - Learning to Relate Literal and Sentimental Descriptions of Visual Properties, by Yatskar et al., NAACL 2013

Discussing Project with Instructor

- Make appointment to discuss research project
 - Email me with your availability on Sep 17, 18, 21
- Idea selling day: Sep 23rd