

Computational Linguistics 2

LING 4434, Fall 2022

TR 9:40-10:55, Morrill 111

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Course Description: A continuation of Computational Linguistics (LING 4424). We will survey a range of neural network techniques that are widely used in computational linguistics and natural language processing as well as a number of techniques that can be used to probe the linguistic information and language processing strategies encoded in computational models.

Required Reading: We will read a number of research papers from the literature during this course. These are helpful places to learn more:

Published work: *ACL Anthology* <https://www.aclweb.org/anthology/>

Cutting edge unpublished work: *arXiv/cs.CL* <https://arxiv.org/list/cs.CL/recent>

Unpublished cognitive modeling work: *PsyArXiv* <https://psyarxiv.com/>

Programming tips: *StackOverflow* <https://stackoverflow.com/>

Homework: You should have completed Computational Linguistics 1 or Natural Language Processing before this and received a B+ or higher. Programming will be required. The first two assignments will require you to implement some core neural network language processing systems in Python. After the first two assignments, you will work in groups to write programs and papers. Avail yourself of office hours *before an assignment's due date* if you have trouble.

Attendance/Participation: Lectures will be delivered for the first few weeks to provide background for the topics in the course. After the initial few weeks, we will discuss papers from the literature on neural network interpretability. You will be expected to read at least one of the core papers on each topic every week before Tuesday's class. Much class time will be devoted to discussion, working in groups, and answering questions on the lectures, so attendance is required because absence from in-class group work will hinder your classmates.

Grading: For each assignment, you must turn in any code along with your write-up. Each assignment builds to the next, so late work will hold up the rest. Therefore, I will accept assignments up to 48 hours after the due date with 10% off per extra 24-hour period (or partial 24-hour period). So if you submit an assignment 30 hours after the initial deadline, your grade for that assignment would be reduced by 20%.

Attendance	10%	100-97	A+	89.9-87	B+	79.9-77	C+	69.9-67	D+
Homework	5 x 18%	96.9-93	A	86.9-83	B	76.9-73	C	66.9-60	D
		92.9-90	A-	82.9-80	B-	72.9-70	C-	Below 60	F

Special Accommodations: Please see Student Disability Services (SDS) about any accommodations you might need and they will convey that information to me. Email SDS at sds_cu@cornell.edu. SDS is located on level 5 of Cornell Health, 110 Ho Plaza, 607-254-4545, <https://sds.cornell.edu/>

Academic Integrity: Please don't cheat, and please cite people whose work you use. I am **required** to follow-up on suspected violations of Cornell's *Code of Academic Integrity*. I encourage students to watch this video to learn more about what constitutes cheating and why it matters: <https://cheatingvideo.provost.cornell.edu/>

If you have questions about issues of academic integrity, please see me.