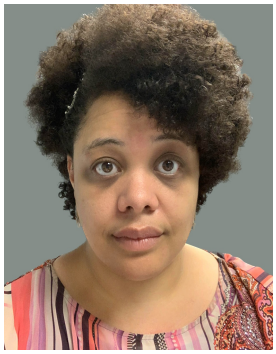
LIN 4930/6932 Modeling Linguistic Processes

Fall 2025

Matherly 0108
MWF 12:50-1:40 PM
Course website: elearning.ufl.edu



Instructor: Alayo Tripp

Office: Turlington 4108
Email: atripp@ufl.edu
Tel: (352) - 392 - 0639
Office hours: Tu 1:55-2:45 PM
email for additional availability

Course description

This course teaches the principles of abstraction which unite models of linguistic information. The focus will be on formalizing questions about human language behavior using ideas from statistics, machine learning and computational linguistics. Students will be familiarized with fundamental programming skills, and then collaborate to motivate, formalize, implement and evaluate competing computational models representing explanations or descriptions of linguistic processes.

Learning Objectives

1. Describe the significance of theoretical, computational, experimental and applied models in linguistics
2. Evaluate the relationship between a model's structure and the model's operational and ethical commitments
3. Discuss model strengths and weaknesses in light of limiting assumptions
4. Connect explanatory and predictive modeling with empirical methods
5. the principal approaches used in computational language science, including statistical modeling, machine learning and neural networks.
6. Contextualize Natural Language Processing (NLP) techniques within discourses which assign relational significance to socio-political, linguistic and biological categories
7. Evaluate the use of models published in contemporary language science, relating methodological choices to the characteristic constructs and objectives of academic domains
8. Implement small coding projects in LaTeX and R, using best practices in formatting, versioning and publishing code.

Grading

Your grades will be based on: paper presentations (20%), active in-class participation (20%), timely postings to the discussion board (10%) and the final project (50%).

This course follows UF grades and grading policy:
https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

		B+	87-89%	C+	77-79%	D+	67-69%		
A	94-100%	B	83-86%	C	73-76%	D	63-66%	F	0-59%
A-	90-93%	B-	80-82%	C-	70-72%	D-	60-62%		

Paper Presentations
Presentations will summarize the assigned reading and conclude with points for discussion. Presenters should make an effort to incorporate relevant discussion board material. Slides should be sent to atripp@ufl.edu before the start of class.

Discussion Board Participation
Students are required to submit at least two posts to the Canvas discussion board each week. The first should be done by 2:00 PM each Monday. It is not necessary to begin an original thread for each post; substantive comments in reply to your fellow classmates, or posts made elaborating on ideas you previously posted also count towards this requirement. The discussion board may be used creatively, but posters must maintain a professional tone, engage with prior posts where appropriate, and clearly index relevant sources. Effective posts may express reactions to course content, ask and answer clarifying questions, pose thought experiments or propose discussion topics for class time.

Problem Sets
Problem sets will provide opportunities to experiment with altering provided code and challenge students to engage course concepts while building practical skills. Students are encouraged to collaborate in solving problems but must submit their own written work. There will be a portion of class time devoted to working on problem sets.

Final Project
Students will collaborate to create and evaluate competing models of a linguistic process. Deliverables for the project will include a Literature Review, Problem Statement, Project Proposal, Code Repository and a Final Paper combining the above with sections describing the Methodology and discussing the Results. Additionally, groups will submit a statement indicating the specific

contributions of each individual to the project.

This course complies with all UF academic policies. For information on those polices and for resources for students, please see https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

For an up to date schedule of assignments, consult the Canvas site.

Tentative Schedule		
Date	Reading to have done	Topic
8/22	Syllabus	What is a Model?
8/25	Guest, O., & Martin, A. E. (2021)	Lab: What If?
8/27		Formalization
8/29	Willems, R.M. (2011)	Marr's Levels
9/3	van Rooij, I., & Blokpoel, M. (2020)	Computation
9/5		Lab: Formalization
9/8	Navarro, D. (2013) Ch 1-3	Intro R
9/10		Set Theory
9/12		Number Theory
9/15	McMurray, B. (2007)	Algorithms
9/17		Lab: Reproduction
9/19		Project Clinic
9/22	Russell & Norvig (2010) Ch 14, Perfors, A. et al. (2011)	Uncertainty & Bayesian Models
9/24	Goodman, N.D. & Frank, M.C. (2016)	
9/26		Project Presentations
9/29	Piantadosi (2014)	Statistics
10/1	Frank, S.L. et al, (2013)	Surprisal
10/3		

Tentative Schedule		
Date	Reading to have done	Topic
10/6	Jara-Ettinger & Rubio-Fernandez (2022)	Pragmatics
10/8	Vallabha et al. (2007)	Unsupervised Learning
10/10		Project Clinic
10/13	Bolukbasi et al., (2016)	Algorithmic Bias
10/15		
10/20	Frank, S.L., (2021)	Multilingualism
10/22		
10/24		Project Clinic
10/27	Pater, J. (2019)	Lab: Neural Nets
10/29		
10/31		Project Clinic
11/3	Bender et al. (2021)	Deep Learning
11/5		
11/7		Project Clinic
11/10	van Rooij, I. (2022)	Model Evaluation
11/12		
11/14		Project Clinic
11/17	TBD	Project Presentations
11/19	TBD	Project Presentations
11/21	TBD	Project Presentations
12/1		TBD
12/3		TBD