

Language Technologies, Minor

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Language Technologies Minor

Available to non-SCS students

Students in our Language Technologies Minor program have the opportunity to build on their undergraduate program requirements not only by learning more about this burgeoning field but also have the opportunity to do hands-on project work directed by one of our world famous faculty. Please feel free to reach out to Undergraduate Program Director Lori Levin if you would like to talk about this minor.

Overview

With the recent advances in Large Language Models (LLMs), Human language technologies have become an increasingly central component not only of the field of computer science, but also a suite of key enabling technologies for work in every field. The work of our LTI faculty is impacting the human-critical fields of Education, Medicine, Law, and Finance. Just as a few examples, Dialog systems/chatbots, Information retrieval in many forms, machine translation and speech technologies are used daily by the general public. The LTI prepares students for this world by offering a minor that gives you the opportunity to not only learn about language technologies, but to also apply that knowledge through a directed project and prepares you for lucrative career options, either in this field or just about any other.

Admissions

Students interested in earning a minor in language technologies must apply for admission no later than September 30 of their senior year. An admission decision will usually be made within one month. Students may petition the LTI undergraduate program director to be admitted to the minor earlier or later in their undergraduate careers. To apply, contact the program's director.

Curriculum

Students interested in the language technologies minor must complete our prerequisite courses with an average grade of B (3.0) or better before applying to the program. (Students who do not meet this average must submit a letter of explanation along with their application.)

Prerequisites

Required Prerequisites		Units
15-122	Principles of Imperative Computation	12
15-150	Principles of Functional Programming	12
Strongly Recommended		
21-120	Differential and Integral Calculus	10
21-122	Integration and Approximation	10
21-241	Matrices and Linear Transformations	11
or 21-242	Matrix Theory	
15-259	Probability and Computing	12
or 21-325	Probability	
or 36-218	Probability Theory for Computer Scientists	
or 36-225	Introduction to Probability Theory	

The Language Technologies Minor requires that students complete one core course and their choice of three elective courses of at least 9 units each. The electives can be chosen from a specific set of stand-alone courses listed below. Students may petition to substitute any other LTI course. In addition to the four courses, students in the Minor are required either to do an undergraduate research project for at least 9 units or take an additional elective course.

Core COURSE REQUIREMENT

		Units
11-324	Human Language for Artificial Intelligence	12

Electives (choose 3):

11-344	Machine Learning in Practice	12
11-411	Natural Language Processing	12
11-422	Grammar Formalisms	12
11-423	ConLanging: Lrng Ling & Lang Tech via Constr	12
	Artif. Lang	
11-424	Subword Modeling	12
11-441	Machine Learning with Graphs	9
11-442	Search Engines	9
11-485	Introduction to Deep Learning	12
11-492	Speech Technology for Conversational AI	12
11-667	Large Language Models Methods and Application	12
11-711	Advanced Natural Language Processing	12
11-737	Multilingual Natural Language Processing.	12
11-751	Speech Recognition and Understanding	12
11-776	Multimodal Affective Computing	12
11-777	Multimodal Machine Learning	12
80-180	Introduction to Linguistics	9

Project - Choose Applicable Project Course

Project:		
11-390	LTI Minor Project - Juniors	12
11-490	LTI Minor Project - Seniors	12
11-590	LTI Minor Project - Advanced	12

Double Counting of Courses

Students may double count 11-324 Human Language for Artificial Intelligence and 80-180 Introduction to Linguistics toward any other major or minor.