

CS6604 Advanced Topics in Natural Language Processing (Fall 2022)

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Lectures:

Teaching Assistant:

Office Hours:

Additional Links:

Course Overview

This course will cover a broad range of advanced topics in natural language processing, ranging from general techniques such as deep learning for NLP to specific topics such as information extraction, question answering, natural language generation, machine translation, multimodal reasoning and so on. We will discuss the main challenges of each topic and the state-of-the-art techniques, mainly recent deep learning based proposals to solve these challenges. It's intended for graduate students who have familiarity with machine learning and deep learning, and previous course or research experience in natural language processing. It may also be appropriate for computationally sophisticated students in linguistics and related areas. Students are expected to understand various cutting-edge techniques in natural language processing, develop capability to conduct research on related topics, and improve other research skills, such as reading research papers, discussing technical details with oral and written presentations, conducting literature survey, providing feedback and so on.

Learning Activities

This is a research-oriented course, which will mainly be based on paper discussions led by students from a reading list of a particular topic. Students are also required to provide feedback regarding the discussed papers and participate in the class discussions. Students will also form groups of two and work on a final project and submit a final paper.

Prerequisites

- Programming in Python
- Programming with PyTorch or TensorFlow
- Already took NLP and machine learning courses, or familiar with these topics and classic techniques
- Familiar with deep learning techniques
- Interest in NLP or linguistics