

STA5934 Text Mining with Deep Learning

Time: 1:20-2:10, Monday, Wednesday, and Friday

Place: OSB 327

Textbook: None

Lecturer: Dr. Jinfeng Zhang

Office:

Office hour: 2:10-3:10PM Monday

Prerequisite

Basic python programming.

Introduction

The course will teach students text mining techniques with an emphasis on deep learning using Python as the programming language.

There will be multiple projects assigned throughout the course.

The course will be taught on Zoom at the designated teaching times.

Recorded videos will be provided for most of the topics.

Grading

Grade will be determined based on performance from projects.

Teaching assistant

No teaching assistant for the course

Topics

Below are some tentative contents we would like to teach in the course. Based on the actual progress of the course, we may not be able to cover all the topics.

Text mining:

Part of speech tagging

Syntactic analysis

Semantic analysis

Text representation, especially bag-of-words representation

Context of a word; context similarity

Paradigmatic relation and Syntagmatic relation

Entropy and mutual information

Topic and coverage of topic

Language model

Clustering, document clustering, and term clustering

Text categorization, topic categorization, sentiment categorization, email routing
Spam filtering
Opinion holder, opinion target, sentiment, opinion representation
Sentiment classification
Rating prediction
Aspect rating and aspect weight
Latent aspect rating analysis (LARA)
Context (of text data) and contextual text mining

Deep learning:

Deep learning introduction
The mathematical building blocks of neural networks
Getting started with neural networks
Fundamentals of machine learning
Word embedding
Convolutional neural networks (CNN)
Recursive neural networks (RNN)
Generative deep learning
Graph based models

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://dof.fsu.edu/honorpolicy.htm>.)

Americans with Disabilities Act

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

sdrc@admin.fsu.edu

<http://www.disabilitycenter.fsu.edu/>