

CAI4201 Natural Language Processing

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CAI3601&EBA 2203	4	7/8	2	2	0	3

COURSE AIM

- Understand approaches to syntax and semantics in NLP.
- Understand approaches to discourse, generation, dialogue and summarization within NLP.
- Understand methods of machine translation.
- Understand machine learning techniques used in NLP and its applications

COURSE WEEKLY CONTENTS

- 1 Introduction and fundamental algorithms
- 2 Applications Overview: Machine translation, question and answering, chatbots and dialogue systems, automatic speech recognition, text to speech.
- 3 Estimation Techniques and Language Modeling (N-gram Models)
- 4 Naïve Bayes and Sentiment Classification
- 5 Vector Semantics and Embeddings
- 6 Neural Networks doer NLP
- 7 Syntactic Structure and Dependency Parsing
- 8 Sequence labeling for parts of speech and named entities
- 9 RNNs and LSTMs models for NLP
- 10 Semantic Role Labeling and Argument Structure
- 11 Lexicons for Sentiment, Affect, and Connotation
- 12 Attention and Self-attention basics
- 13 Transformers and transfer learning for NLP
- 14 Machine Translation (MT)
- 15 Natural Language Generation/Summarization

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook	Jurafsky, David, and James H. Martin. Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition.
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