

BioMedical NLP

Intro

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BioMedical NLP

BioMedical NLP = part of the wider area of Artificial Intelligence for Medicine / bio-informatics

BioMedical NLP = the use of **NLP methods** for helping biology and medicine research, clinical practice, and adjacent areas

Many applications, niche topic in NLP research.

Useful for: doctors, patients, other actors in the medical system (insurance, policy makers); researchers, maintainers of resources used in biology/medicine research

Universal end goal: All in all, general end goal: **improving quality of life through understanding life processes.**



Organization & grading

- 1 class every week (8-10)
- 1 seminar each week (10-12): first year/second year in alternative weeks, but you can join whichever you prefer/all of them
- Research focused, latest findings in NLP, relying on conference and workshop publications
- This year: Master's year I + II together
- Seminar: paper reading group! Simulating real-world scientific publication protocol

Grading:

- team project (70%)
- seminar: review and present 1 paper (individual) (30%); review&discuss colleagues' papers



Organization & grading

Materials: slides, book, conference/workshop proceedings

links to paper resources:

<https://aclanthology.org/> (general ACL* papers, if they are on biomedical topics)

<https://aclanthology.org/venues/bionlp/>

<https://aclanthology.org/sigs/sigbiomed/>

<https://aclanthology.org/venues/clpsych/>

eRisk proceedings (<https://erisk.irlab.org/>)

PubMed: <https://pubmed.ncbi.nlm.nih.gov/> (general medicine papers, if they use NLP)



Paper reading group

- Each student will review and present a paper in BioMedical NLP research during the seminar
- ~4 presentations per session
- I will share a list of papers to choose from; or you can add your own
- Read the paper, write a review, send it to me before the seminar, talk about the paper at the seminar (20-25 minute presentation + 5-10 minute discussion)
- I will give the first presentation + example review
- Paper list + scheduling of presentations (see MTeams files)
- Detailed instructions:
https://drive.google.com/file/d/1saN_X9nxVY4NlZO_AvwtPORBLOWMreS1/view?usp=share_link



Projects

Project topic list: open-ended:

https://drive.google.com/file/d/132hsx6Byvop9oowdJvGoNYUTaytj8RP-/view?usp=share_link

Teams of 1-4 people, max 4 teams can approach the same topic, except for shared tasks where there is no limit (as long you participate as separate teams and solutions are different!)

Team and project matching: (see MTeams Files)

Deliverables:

- implementation of a solution to a problem related to BioMedical NLP, participation in a relevant shared task
- short paper explaining what you did (structure follows academic paper structure)
- presentation



NLP workshops for biomedical texts with relevant publications:

- [Proceedings of the Fifth Workshop on Building and Evaluating Resources for Biomedical Text Mining \(BioTxtM2016\) - ACL Anthology](#)
- [Biomedical Natural Language Processing Workshop \(BioNLP\)](#)
- [Clinical Natural Language Processing Workshop \(ClinicalNLP\)](#)
- [BioCreative VII Workshop](#)
- [Workshop on Scientific Document Understanding](#)