Master project 2020-2021

Personal Information	
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Project

Web development & bioinformatic tools

Project Title:

Deep Learning based approaches for mining biomedical databases

Keywords:

Deep Learning, Data mining, Databases, Natural language processing

Summary:

This project aims the implementation and development of a tool based on Deep Learning models for the extraction and abstraction of biomedical knowledge using machine learning analysis of the contents in biomedical references databases (PubMed, MedGen, ...). Specific searches for terms related to a target disease will feed deep clustering algorithms to determine a set of disease-related descriptors. Then, recurrent-neural networks must be trained to assign automatically biomedical articles to disease-related descriptors.

References:

COHEN, Aaron M.; HERSH, William R. A survey of current work in biomedical text mining. Briefings in bioinformatics, 2005, vol. 6, no 1, p. 57-71. Gully A Burns, Xiangci Li, Nanyun Peng, Building deep learning models for evidence classification from the open access biomedical literature, Database, Volume 2019, 2019, baz034, https://doi.org/10.1093/database/baz034 Lan, K., Wang, D., Fong, S. et al. A Survey of Data Mining and Deep Learning in Bioinformatics. J Med Syst 42, 139 (2018). https://doi.org/10.1007/s10916-018-1003-9

Expected skills::

Python, Machine Learning, Databases, Data mining.

Possibility of funding::

No

Possible continuity with PhD: :

To be discussed