Universitat Pompeu Fabra Barcelona | Master in Bioinformatics for Health Sciences

Master project 2020-2021

Personal Information

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Project

Computational systems biology

Project Title:

Molecular pattern recognition from high-throughput data of patients in a Real World Database

Keywords:

artificial intelligence, high-throughput, real world data, GEO database

Summary:

GEO database contains the description of millions of experiments including high-throughput data. Some of these experiments are based on primary cells and represent a source of Real World Human Data (RWD), being this type of data of special interest for FDA and EMA during drug development process. After the isolation and preparation of GEO database, it is necessary carrying out tasks associated with the validation of our RWD repository. This validation process is based on pathway enrichment analyses and the study of over/under expression of proteins, and they will be done by using artificial intelligence (AI) techniques. The student enrolled in this project will be the responsible to validate a subset of patients associated with certain specific pathologies (pending to decide). The student will select the patients from our RWD repository and will use AI techniques to compare patients' data in front of data from healthy people.

Expected skills::

programming python, c++ or Matlab

Possibility of funding::

To be discussed

Possible continuity with PhD: :

To be discussed