## *Development of machine learning models to process Electronic Health Records- Explainable Models*

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## Proposal

### Motivation

*Publicly available large scale Electronic Health records (EHR) is an important resource to developing a robust clinical decision system. However, these data are often complex and irregularly sample, making the use of this data a challenging task.*

### Aims

In this project, we aim to,

* Preprocess and reorganize data for machine learning
* Discover different imputation methods to solve missing values
* Develop an efficient machine learning model to predict in-hospital mortality rate
* Export the machine learning model into an application where users can insert their recordings to predict possible risks.
* Develop mechanisms based on global and local interpretability to explain the outcome of the models and identify risk factors

## Progress

* *Created a local version on the MIMIC-III database*
* Extracted useful information from the database
* Preprocessed and reshaped the data
* Applied different imputation methods to fill in missing values
* Trained machine learning models to predict in-hospital mortality
* Trained deep learning models to predict in-hospital mortality
* Compared the performance of using different models

## Problems and risks

### Problems

*[What problems have you had so far, that have held up the project?]*

### Risks

*[What problems do you foresee in the future and how will you mitigate them?]*

## Plan

*[Time plan, in roughly weekly to monthly blocks, up until submission week]*