
JAMES C. COX

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Required Skills:

This project will require students to have a good background in machine learning.

Preferred Team Communications:

WEBEX, Skype or Conference call

Data Sources:

We have a large sample of de-identified electronic health records data.

Other Items:

Project has timezone flexibility. Mentors and students will determine a good time for virtual meeting

MODELING OF UNPLANNED HOSPITAL READMISSIONS

We have previously developed two models (Random Forest, Logit) for hospital readmission and worked with students in CS 6440 to incorporate one of them into a FHIR app.

PROJECT OBJECTIVES

The objective is identification of an efficient data imputation algorithm for missing observations. Performance of the two discharge models will be evaluated with the new data imputation algorithm.

SUCCESSFUL PROJECT

This project aims at developing data imputation algorithms for data with randomly missing (MCAR) observations as well as for data that are not missing at random (MNAR). We have a large sample of data from (de-identified) electronic medical records. Patients are known to have been discharged and subsequently readmitted or not readmitted with the same diagnosis code within 30 days. In addition to patients' unvarying data (comorbidity, gender, etc.) and daily clinical data we also have normal range of values of clinical variables.

Intellectual Property: Project involves a government agency so the resulting project is made available to the public. Students do not own IP. Students will be recognized as contributors