Using Open Healthcare Datasets to Teach Health Data Analytics

TREO Talk Paper

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Abstract

While the adoption of electronic health records (EHRs) has increased significantly since the Health Information Technology for Economic and Clinical Health (HITECH) Act was enacted in 2009, the amount of healthcare data has increased exponentially. Health data are collected in every component of the health care ecosystem (Stanford Medicine 2017) and health data analytics has become vital for healthcare organizations to make informed decisions to improve healthcare quality and lower costs.

TEKsystems, a leading provider of IT staffing solutions, IT talent management expertise and IT services, explored the current state of IT operations within healthcare organizations. The report indicates that business intelligence/big data ranks the second among the top five technologies in which healthcare organizations invest to increase quality care and patient engagement (TEK Systems 2017).

To better prepare our IT students, we offered a special topics course on health data analytics in spring 2018. Students learned the importance of healthcare data, data analysis process and tools, and worked with open healthcare datasets (for example, Centers for Medicare and Medicaid Services 2018; U.S. Department of Health & Human Services 2018; The Office of the National Coordinator for Health Information Technology (ONC) 2018). We designed a number of labs to introduce health data analytics concepts, cases, and research methods.

The technologies and tools used in the course include:

- Database management systems – MySQL
- Business intelligence applications – Tableau and Power BI
- Spreadsheet programs – Microsoft Excel
- Programming languages used for data processing and analysis – R

In this TREO talk, we share our teaching and lab plans, the datasets and tools used, related resources, and student reflections of their learning experience.

References


