

Practicum Project Proposal: Health Analytics & Visualizations

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Abstract—The practicum project is the final course project for CS 6440. The goal of this project is to offer students opportunities to solve practical health informatics problems using what they learnt from the course. As a student in the course I will not waste such an opportunity. This proposal will briefly talk about the focus and topics of the project, the problems the project designs to solve and complexity and potential issues in implementation.

1 AREAS OF FOCUS

The project should have a specific area to focus on so that the implementation process will not be awfully bifurcated or complicated. The focuses align with the course units, and the project will attempt to solve specific problems that fall under the subjects of some units.

1.1 Unit(s) of Focus

My project will mainly focus on unit 1 and unit 2, which are health informatics and analytics.

1.2 Topic's Primary Area of Focus (or External/TA Mentor Topic Area)

I will work individually on the TA/Mentor Project #20 - Health Analytics Tool Kit. The major part of this project utilizes topics covered unit 2 - health data analytics and visualization. While this project may also breeze through topics in unit 1 such as EHRs, general health data searching and fetching.

2 BACKGROUND AND SIGNIFICANCE

Data science is now incorporated and utilized in many fields, and the health industry is of no exception. White (2020) states that health analytics practitioners are leveraging big data to facilitate clinical decision making and hospital operations. Apparent benefits are reduced operational cost and higher patient satisfaction. Moreover, big data systems are able to give out predictions of a patient's body conditions in the future. Article "Healthcare Analytics is Crucial

for Employee Benefits—Here’s Why” (2019) contends that health analytics and visualization are good for both patients and healthcare practitioners, because automatic analysis and visualization help patients understand their health data more easily and thus in turn increasing the communication efficiency between clinicians and patients.

Health analytics has great research and practical value in this digital age. We should get more people immersed in this field, let them learn about the promise of health data analytics and keep the health analytics community strong and alive.

3 PROBLEMS

The project aims at providing educational materials of several health analytical toolkits to support the community of healthcare practitioners and researchers. A lot of health analytical tools are honestly not novice-friendly. Students working on this project are expected to provide detailed guidance on certain toolkits to help practitioners learn the usage of those tools.

4 PROPOSED SOLUTION OR IDEA

The first thing to do is to read the documentation of the software because the developers know their own work the best. If there is something in the documentation really hard to understand the student can search in Google to find some real examples.

After reading through the documentation and the student makes sure he/she gets a basic understanding of the toolkit, she/he should try to create their own examples or test code that runs on the software to enhance understanding and familiarity. The more the student plays around with the tool the more proficiency he/she gains.

Coupled with the example code the student created, write a detailed and slow-paced walk-through for the software. Make sure people having little technological experience can understand without too much difficulty. Add video demos if these facilitate learning.

5 COMPLEXITY AND EFFORT

For this project, most of time will be spent on reading and understanding the documentation. Typically, the documentation would be enormous. Also, when

trying the toolkit by myself, I would not use any unauthorized patient data. I will only find public and open-source example data for learners to try out.

6 REFERENCES

1. *Healthcare Analytics is Crucial for Employee Benefits—Here's Why.*
(2019, October 8). Artemis Health.
<https://www.artemishealth.com/blog/healthcare-analytics-is-crucial-for-employee-benefits-heres-why>
2. White, W. A. (2020, October 5). *Healthcare Analytics and Why It Matters.* IZENDA.
<https://www.izenda.com/what-is-healthcare-analytics/>