The Many Audiences of Healthcare

November 16, 2018

“Enormous amounts of new knowledge are barreling down the information highway, but they are not arriving at the doorsteps of our patients”

– Dr. Claude Lenfant

BACKGROUND AND MOTIVATION

From the interaction between patients and clinicians, to resource allocation, to changes in the billing and claims processes, it is clear that technology is transforming aspects of care across the healthcare industry. However, captured through both practice and research, the increasing availability of digitized health and wellness data has resulted in a volume of information so large it can no longer be reasonably expected that an individual can consume it.

In response, healthcare has turned to analytical approaches, combining statistics, machine learning, and computer science methodologies in order to extract, manipulate, and analyze data from millions of individual entities across the globe. This approach has proved highly successful, fostering in an era of personalized and predictive care, offering a myriad of opportunities from improved patient stratification, to identifying novel disease comorbidities and drug interactions, to the prediction of clinical outcomes.

However, as works continue to emerge, quotes such as that from Dr. Lenfant have made it overtly clear that, as healthcare becomes increasingly intertwined with the statistical methodologies of data science, the continued advancement in the practice and administration of healthcare mandates an interdisciplinary approach. One requiring individuals with both clinical, technical, and even administrative backgrounds.

Yet, simply acknowledging the need for interdisciplinary research is not enough for it to succeed. Truly expanding knowledge of such phenomena will require collaborations with those individuals whose expertise lies in the exploration and discernment of healthcare. Thus, it is perhaps more
appropriate to view the development of health analytics as a collaboration with the complex system encompassing clinicians, patients, workflows, and the operational aspects both inside and outside of formal clinical settings in which they all exist.

It is at this intersection, where Assignment 4 falls. As is the case with most collaborations, each group will come forth with a mindset focused on their own concerns or interests (be it treating patients, collecting data more effectively, cost savings, etc.), and the ability to understand and dialogue about these perspectives is more important now than ever. This assignment will present an opportunity to practice how, as an aspiring analytics researcher, you can consume and present information pertaining to a single topic to multiple different stakeholders.

**Assignment Details**

In groups of 4-6 (no less than 4, no more than 6), students will explore a hot topic in the health analytics field. Groups are free to choose any topic they wish, as long as it has a direct impact on healthcare and there is sufficient evidence supporting the need/value of analytics in addressing the problem\(^1\). Note, significance to the healthcare domain need not be clinical, and can focus on community health, personal wellness, and even societal / ethical problems that may be addressed in an analytical manner.

Groups will be asked to give a 5 minute “lightning talk” about the topic they selected. However, as a twist, as you will be presenting the topic twice (for a total of 10 minutes), each to a different set of stakeholders. You can select from any formal healthcare role, be it clinician researchers, health analytics researchers, or administrators, however at least one of the two must be technical (this is an analytics class after all \(©\)). Your groups are intentionally 4-6 members, so it is perfectly fine to split into two parts, each handling one of the talks.

Once you have selected a topic, you will then be required to do some research, formulating a strong knowledge base around the problem. This should include aspects of why the problem is relevant/important, the (technical) contributions made in addressing the problem, the barriers to success, etc. It is your job to convince me (the pretend manager of each group), that I should invest time and resources on addressing the problem using analytics.

Each presentation should have an explicit focus on why your topic matters to each group, and utilize vernacular and statistics / materials that are relevant to those would be listeners. For example, health analytics researchers may be more concerned with the infrastructure and models used, while clinician researchers may focus on workflow and output. Both may care about error rates, but the description given to each will likely be very different.

**Presentation Materials:**

I have chosen the lightning talk format as we have become accustomed to using slides as a fallback during a presentation. In this exercise you will utilize them as supplemental aids. Groups will create two brief PowerPoint slideshows (1 for each lighting talk) with minimal wording designed to convey the importance of idea quickly to those with only a few minutes to listen.

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\(^1\)Feel free to reach out by email or during office hours, should you want to run your idea by me.
Final Deliverables

In class 10-minute presentation (2, 4-5 minute lightning talks per group). Groups will be asked to submit their slides in advance (the night before, pptx format) so we can move through each presentation within one class period. I will be providing a specific grading rubric in the coming weeks as you prepare your talks.