Milestone 1 Testing a Model for an Automated Real-Time Acuity Monitoring System in the Emergency Department

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Abstract

The purpose of this project is to determine if patient acuity in the ED is correlated to patient eigenvector centrality in the network of all face to face ED interactions.

Overview & Motivation

- Overview and Motivation: Why did you undertake this particular project? What inspired you, what are your background and research interests that may have influenced your decision?
- Project Objectives: What is the primary focal question that you are trying to answer? What would you like to learn and accomplish?
- Data: from where and how are you acquiring your data? **Provide a link to your data source.**
- Data Wrangling: Do you anticipate that there will be extensive data cleaning / reshaping / extraction? Are there questions you will need to calculate in your data (e.g., perhaps you have height and weight, but not BMI)? How will you implement this particular data wrangling step?
- Exploratory Analysis: Which methods / visualizations are you planning to use to explore your tidy dataset?
- Analysis: How are you planning to analyze your data? _ Schedule, keeping in mind the due dates listed above for the intermediate and final milestones, make a plan to meet these deadlines. Write these in terms of weekly tasks / goals.

As a ballpark, your proposal should be about 2-3 pages of text, along with shells of the tables and figures that you plan. You could even include some preliminary data acquisition / analysis steps.

After we receive your proposals we will find a time to meet with you to discuss your proposal and also to help guide you through the rest of the analysis.

Objectives. The purpose of this study is to test the accuracy of the Emergency Severity Index (ESI) as a metric used to predict patient needs. To test the accuracy of the ESI, this study uses radiofrequency identification (RFID) locating data that includes every interaction patients have with ED staff (nurses, techs, administrators, and providers) and the duration of each of those interactions. Using this data will require specific knowledge of the R statistical packages, network analysis, and data science. My learning objectives are to: - Use Github, R Studio, R Markdown, to clean, describe, analyze, and publish results from the identified database. - Apply visualization tools to the data and results that create greater understanding of the research and significance. -

Functionality. The Elsevier article class is based on the standard article class and supports almost all of the functionality of that class. In addition, it features commands and options to format the

- document style

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- baselineskip
- front matter
- keywords and MSC codes
- theorems, definitions and proofs
- lables of enumerations
- citation style and labeling.

Methods

The author names and affiliations could be formatted in two ways:

(1) Group the authors per affiliation.
(2) Use footnotes to indicate the affiliations.

See the front matter of this document for examples. You are recommended to conform your choice to the journal you are submitting to.

Results

Discussion

Conclusion

There are various bibliography styles available. You can select the style of your choice in the preamble of this document. These styles are Elsevier styles based on standard styles like Harvard and Vancouver. Please use BibTeX to generate your bibliography and include DOIs whenever available.

Here are two sample references: Allaire et al. (2017; R Core Team 2017)

References

Allaire, JJ, R Foundation, Hadley Wickham, Journal of Statistical Software, Yihui Xie, Ramnath Vaidyanathan, Association for Computing Machinery, et al. 2017. *Rticles: Article Formats for R Markdown.* https://CRAN.R-project.org/package=rticles.

R Core Team. 2017. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.