

Kevin Patterson

CMSI 402

1/27/2020

## **Project Proposal**

### **Description**

For my CMSI 402 project I will be updating the display page for when a user right clicks on a node for the DNA, RNA, or protein in the graph displayed by GRNsight. GRNsight is a project headed by Dr. Dionisio and Dr. Dahlquist that allows the user to upload a file which the program then creates a graph of nodes and edges allowing for GRN visualization. Currently the site is hardcoded to only display information about yeast when a user clicks on a node. It is my goal to expand the usability of this feature beyond yeast and allow it to work with the most important model organisms. Difficulties for this feature include the issue of querying multiple databases, some unique to certain species, and refining the data so that the user only receives the most important and pertinent information. In addition to the backend work that I will be doing on this page, I will also be developing a new front end that will display the information from the database calls more cleanly and efficiently. This may entail creating data visualization for some of the information that I receive. Overall the goal of the front end is to make the data more approachable while still providing ample information for the target user. The target user for the site are both the scientific community as well as biology and other students. The sight requires some previous knowledge of biology for the data to be interpreted as GRN sight is just a visualization and data compilation tool.

## **Justification**

The project requires skills that I have been learning and using throughout my LMU career, but will mostly require what Dondi taught me in interaction design as I will be working with both front and backends. This project is my first faculty run research project, and the structure and more demanding project schedule with weekly meetings create a challenging and more industry appropriate development environment. The strict use of versioning and Github issues are new for me, and I look forward to learning how to deal with working with these features in the project. I will also get to work with Github branching which is something that I am familiar with but not an expert in. This project lets me learn and practice skills that have been part of what I have learned at LMU and the faculty and interdisciplinary nature of the project adds to the importance of my work and involvement as part of the team. I feel the complexity and professional nature of the project makes it a great way for me to capstone my time at LMU.