User Interaction in Online Science Forums: A Visual Representation
Stephanie Bond, 2013

As a part of the Social Network Innovation Lab, my main project was to create a visual representation of user interaction within online Life Science forums. A great deal of the project was spent collecting data from both Social Networks. First, my fellow SNIL researchers used a program called Nvivo to code interactions between users. I entered this information into a database using the programming language PHP. When the database had enough to visualize, I wrote the Processing code that created the below interface. The buttons in the left grey column allow the user to chose a forum, the boxes in the center of the visualization compose the matrix that have the users from the forum across the x and y axes and the right grey column details the box that the mouse is currently over.

The purpose of this visualization is to engage users with the Social Network Innovation Lab’s research. The broad goal of the project was to analyze the interactions between users on specific life-science social networks. Reading forums to discover who was participating most frequently and how was essential to this analysis. The visualization tool needed to reflect the examination of these interactions.

In order to reflect where most of the interactions were taking place, the visualization’s intensity function was implemented. The color legend that can be found at the top right-hand corner of the visualization below denotes a color for each number of interactions (intensity). Red will always be the highest intensity of the chosen forum whereas black represents zero intensity. The intensity reflects the participation of each user and will give insight to the users who are most likely to participate within each forum. The black area of boxes is the matrix that reflects the popularity of each forum. Where there are many boxes across the axes, there are many users. The PHD forum visualization found below is an example of a popular forum with many users. The visualization clearly displays to what length each forum topic is being discussed. The more popular forums were used for in depth analysis of interactions because they represent a wider range of people.

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