

MedTop – An Interface for Visualization of Medical Reflective Writings

Project Team: Sean Kotrola, Aidan Myers, Suzanne Prince
Computer Science
Project Number CMSC 325

Faculty Advisor: Bridget McInnes
Sponsor: CCTR
Mentor: Amy Olex

Reflective writing aids medical students in reflecting on their experiences. These writings provide information that could be used to identify key challenges, improve the coverage of their curriculum, and promote interprofessional skills. However, extracting this information presents a challenge. Manually reviewing these texts is labor intensive and difficult for humans to categorize given the variety of topics that can be discussed. In previous work, we developed a tool that automatically extracts common challenges experienced by medical students from these texts. However, utilization of this tool requires a level of programming knowledge not commonly held by medical educators. In this work, we developed MedTop (Medical Topic analysis), a web application that allows non-technical users to analyze reflectives texts and *fully explore* the results.

MedTop uses powerful web frameworks to provide user-friendly interaction with the NLP tool. The interface of the web application is organized into three separate panels. The center panel of the application displays *dynamic visualizations of results*. The left-side panel provides management tools for uploading the data, including an *interactive list of files*. This panel also includes a tab that allows the *modification of parameters* passed to the NLP tool. The right-side panel is populated with *detailed information on user-selected data points* from the visualization. MedTop makes a novel NLP tool *accessible* to medical educators, allowing them to identify challenges encountered by students. This *empowers* them to improve their medical curriculum, which in turn will aid in students' transition into professional practice, resulting in better patient care.