

Undergraduate Research Symposium May 17, 2013 Mary Gates Hall

Online Proceedings

POSTER SESSION 1

Commons East, Easel 84

11:00 AM to 12:30 PM

D-Jargonizer: A Tool for Reading Technical Text

Meran Hill, Senior, Psychology, Informatics

Dane Frederick Paschal, Senior, Informatics (Information Architecture)

Linus Silver Willson, Senior, English, Informatics (Human-Computer Interaction)

David C (David) Wilcox, Senior, Informatics (Information Architecture)

Mentor: Amy Ko, Information School

Mentor: Jared Bauer, University of Washington

While professionals in the Information Technology (IT) industry are able to read and understand new terms by associating them with previous knowledge and current context, professionals outside of the industry struggle with unfamiliar words and acronyms in dense technical documents. In these circumstances, many people turn to online resources such as Wikipedia to define or explain terms they don't understand. Yet, switching attention between reading an article and searching for information using various resources can increase cognitive load, thereby increasing perceived stress level and potentially reducing the effectiveness of both tasks. To address this problem, we propose the D-Jargonizer: a web-based tool that assists non-technical professionals as they read complex technical documents by allowing users to select and define technical terms with minimal distraction. We hypothesize that this tool will reduce cognitive load, perceived stress and make it more enjoyable for professionals outside of the IT field to read and comprehend technical documents. First, using a diagramming application, we will create a static prototype that imitates the proposed functionality of the D-Jargonizer. Students at the University of Washington who are unfamiliar with technical documents will be recruited to test perceived stress and enjoyment while using the prototype, as well as provide feedback about the overall user experience. Based on our initial user testing, we will develop a Google Chrome extension that allows users to select a term on a web page, searches for the term in an ontology based on Wikipedia entries and displays the definition in a text box on the page itself. Our tool will be tested again to confirm our hypothesis and verify usability. While the D-Jargonizer currently focuses on helping people understand technical documents, the basic

concept could be applicable to medical or legal documents in the future.

POSTER SESSION 1

Commons East, Easel 83

11:00 AM to 12:30 PM

Chess Scouter

Andre Le Stackhouse, Senior, Informatics (Human-Computer Interaction)

Ari David Ashkenazi, Senior, Informatics (Human-Computer Interaction)

Brenna Smith, Senior, Informatics

Dominic Carlo Andrilla, Senior, Informatics

Mentor: Amy Ko, Information School

Mentor: Jared Bauer, University of Washington

Though the rules of chess can be learned in a day, people spend years learning the nuances of the game that can make them masters. Important strategic details often go unnoticed or are not fully understood by novice players. Tactical play refers to maneuvers that limit an opponent's options, or present multiple problems simultaneously resulting in a tangible gain. Moves like pins, forks, and skewers all fall into tactical play. Positional play refers to maneuvers that strengthen a player's position on the board or weaken an opponent's. Space, or how many squares a player controls, is an aspect of positional play. We speculate that by just seeing these strategic details, novice players could play stronger games of chess. We will be designing and implementing a set of visualizations that can be overlaid onto a digital chessboard that may help novice players more quickly and meaningfully see potential patterns, threats, and opportunities in hopes of helping them play more successful games. Our application could serve as a tool for further research on the relationship between visualization and chess learning, but our focus for the remaining quarter is only to design the application through research of chess and collection of feedback from chess players of all levels, and to implement a working application that may run in a web browser. Assuming the project is a success, future work may include a within-subjects study that compared how well novice chess players fared against a consistent chess AI both with the visualizations enabled, and without based on victories, losses, total moves until the end of game, and total value of pieces lost versus pieces captured.