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Senior Design

Prof. Annexstein

10 September 2020

Individual Capstone Assessment

Our project is to create a web extension tool that can algorithmically evaluate statements presented as facts on a webpage. The basic specification of the project will involve using two separate algorithms. The first algorithm will identify factual statements in a body of text. We will likely need to develop this algorithm ourselves since I am not aware of such an algorithm. The second one will evaluate factual statements against other sources from the internet. For this one, we will try to apply a form of the PageRank algorithm to fact-check the statements. Our approach assumes that factual statements will appear more often and/or from more reputable sources.

Many of the Computer Science courses I have taken have directly taught me a specific programming language while also teaching me how to learn new languages. These classes are CS 1021 Computer Science 1, CS 2021 Python Programming, CS 2028 Data Structures, CS 3003 Programming Languages, and CS 4092 Database Design/Development. While I will probably use one of the languages that I already know, I will learn a new language for this project if necessary. Design and Analysis of Algorithms (CS 4071) taught me some common algorithms (including PageRank) that I plan to apply to the project. I am currently taking AI Principles and Applications (CS 4033) to learn more about artificial intelligence. Depending on what I learn in the class, I may decide to implement some degree of AI into the project.

I have had 3 co-op experiences so far. My first two were with London Computer Systems as a Quality Assurance Co-op and a Software Developer Co-op. My most recent experience was with Northrop Grumman as a Software Developer Intern for half of the time and the other half was spent using LinkedIn Learning courses to learn about web development. At London Computer Systems, I learned both how to look for issues in software by looking at it from the user's perspective and how to work on development projects in a professional setting. At Northrop Grumman, I got another perspective on developing in a professional environment while getting an opportunity to work on a project with a small team. Using the LinkedIn Learning classes, I was able to learn HTML, JavaScript, jQuery, and CSS. Since this project will deal with webpages, I will be using these languages to navigate the webpage content.

We live in a time where information exists in abundance. Because so many people have access to the internet, many of the facts presented are incorrect. Some people do this intentionally, such as fake news sites spreading false facts for political gain. Others do it unintentionally, such as people citing an incorrect fact that they think is correct. This can make it hard to trust anyone on the internet. Because of this, I wanted to create a tool that evaluates facts algorithmically. Such a tool would be unbiased because it eliminates the human influence which can be prone to errors.

What I currently consider to be a finished version of the project is a working browser extension that has two main capabilities. First is should be able to find and highlight statements made as factual on

a webpage. Then it should use an algorithm to evaluate the statements for factuality. If we can complete this project ahead of schedule, we will look to add more features to improve the tool. Conversely, if we are unable to fully complete the tool by the deadline, we will try to publish a stable version of the tool that is as close in functionality to the design specification as possible. To evaluate my contributions on the project, I will consider the creative input and code contributions to ensure that I have committed my fair share.