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CS Senior Design

Prof. Annexstein

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### Individual Capstone Assessment

Our senior design project is a web browser extension that can “fact-check” statements around the web. The goal is to algorithmically evaluate statements on a web page as factual or not. The core logic of this extension will need to identify statements in a text body, then compare these statements to those found on reputable web sources. This approach assumes more widespread publishing of factual statements. Also, our own bias of what makes a reputable source could skew results. This project will require effort on the algorithms, user interface and browser extension integration.

Skills acquired from the University of Cincinnati computer science curriculum will play a large role in the algorithm and backend development. I expect to draw on knowledge gained from courses such as Computer Science I (CS 1021), Data Structures (CS 2028) and Design and Analysis of Algorithms (CS 4071). These are all great sources of knowledge that will be needed for general programming and developing algorithms. My electives Cloud Computing (CS 5165) and Networking (CS 5143) will also be helpful. We will need a server to host our application, and these electives should provide a basis of knowledge for using a cloud service provider. I did not have any courses that involved frontend development.

I believe that most of the experience that I will draw on for this project will come from my co-op rotations. I began my education in mechanical engineering, so my first two co-ops will not be incredibly helpful. After changing majors to computer science, I completed three co-op semesters as a Digital Technology Intern at General Electric. In this role, I was a full-stack web developer, and this skill set will be incredibly useful when developing our project. Frontend skills can be leveraged for creating an extension UI and scraping the web page for statements to fact-check. Backend skills will be useful for creating any APIs that the project will demand.

Our project fills a societal need in this age of misinformation. Individuals are blind to manipulation on the Internet through the use of twisted facts or blatant lies. No one has the time to cross-reference everything that they read, so we hope to automate this process. With misinformation being spread about important topics such as climate change, the COVID-19 pandemic and the US election, this project has the opportunity to make a real change and arm the public with good information. Beyond that, I am excited to build a browser extension, since I have never developed one before. It should be a great way to pivot my web development skills to something slightly different.

My expected result is an operational browser (Google Chrome or Firefox) extension that can scan a web page for statements and assign a rating to each statement that will indicate the degree of confidence that it is a true statement. I would also consider an extension where the user highlights and fact-checks a statement manually using our tool to be a success. There are different levels of automation that we could reach, and each level would still provide value to the end user. For example, if all of the algorithms fall apart, a tool that provides sources to cross-reference a statement would still be valuable, even though it wouldn't be fully automated fact-checking. I will evaluate my own contributions through my development load, project management actions, communication and quality of work. There will be more work to do than just the development, so contributions to the team will take many forms.