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Team 10 — Unique User Authentication via Behavioral Metrics

Revised Project Abstract

New Project Abstract — Release 2

For our revised senior project, we instead will be working on a research topic as opposed to creating an application. At first, we wanted to create a training platform that taught cybersecurity in a corporate setting — but in a much more effective manner. Since we stopped a few weeks into the start of our projects, it took us a bit to catch up but we are in a strong position now. We will be specifically researching how one may be able to have unique user authentication via behavior metrics and visual movements. For example, keystrokes, typing speed, incorrect letter frequency, mouse heat maps, mouse movement, and more. We want to be sure that we research the various parts of this topic extensively before attempting to use the necessary tools to collect the data. As of now, our shallow trench is being able to understand and collect survey data for keyboard strokes, typing speed, and mouse movement patterns. There are a multitude of different ways that we can go about this such as manually recording the data; however, we may also set up an environment on a website in order to install tools to track these data because that seems to be the best route to go — as opposed to using JavaScript or Python scripts. This is because it is possible to find free tools that record this data on websites via plugins, whereas the price of software tools are often for enterprises only. After our initial research and testing, we determined that there are unique qualities that a user generates when interacting with web pages. Our results showed individualized heat maps for each user that participated in the survey. While these are only results from a single round of testing, this shows promising results and this unique data could be explored as a possible authentication method in the future. There would be a benefit to exploring this in the future with more rounds of testing with multiple environments.