

Proposal for AI385 Project

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Usability Testing Analysis with Mouse Tracking and Facial Expressions

Problem Description: Usability testing is an essential test conducted during the Software Development Life Cycle (SDLC). It is used to assess how easily and effectively users can interact with a software product, such as a website or mobile application. This testing typically involves observing real users while they are attempting to complete certain tasks within the software product to gather feedback and insights about the system from the user's point of view. Usability testing is crucial because it helps developers uncover issues that can hinder user experience during the use of the system, such as inappropriate labeling, complex design for components, and more. However, many problems can arise in this type of testing, such as users being unable to clearly describe their feedback or there being biased interpretation in results, which makes it ultimately a subjective measure.

Proposal Solution: To address these issues, computer vision can be applied. Basically, we are planning to utilize mouse tracking to develop this computer vision application. The idea is to build a reference path of the mouse movement according to the instructions and compare it with the actual path the user followed to perform the task, and this path highlights the steps the user has taken; the closer the user's path (steps) is to the reference path (steps), the more it indicates that the system is usable. Additionally, we will consider the user's facial expressions while performing the tasks. This approach helps accurately assess if the software has ambiguities in executing the target tasks and measures the usability of the software in an objective manner.