  Abstract

In today's world, technological advancements are happening at an unprecedented pace. With the advent of cutting-edge technologies like 3D gaming, high graphical video games, virtual reality, and improvements in networks from 3G to 4G and now 5G, it's becoming increasingly challenging for developers to keep up with these rapid changes. As web browsers are evolving and improving quickly, it's getting tougher for developers to stay flexible and adapt to these changes, making them more susceptible to errors. While there has been a lot of research on software bug prediction, very little work has been done on identifying common bugs in modern web browsers like Chrome and Firefox. To address this gap, we conducted a study to identify and categorize the most common bugs in Google Chromium and Mozilla Firefox web browsers as two representatives of modern web browsers. We collected data from the publicly available bug reports and the historical development data from their GitHub repositories. We used natural language processing (NLP) techniques to pre-process text data and applied machine learning algorithms such as TF-IDF Classification, and KNN, Naive Bayes to analyze the clusters of the most commonly appeared bugs. Our study sheds light on the most frequent and problematic bugs encountered by web developers.