Million.js: A Fast, Compiler-Augmented Virtual DOM for Performant JavaScript UI Libraries

Bai, Aiden (School: Camas High School)

The need for developing and delivering interactive web applications has grown rapidly. Thus, Million.js was created to allow for the creation of compiler-augmented JavaScript UI libraries that are extensible, performant, and lightweight. This was accomplished by designing a computationally efficient diffing algorithm that relies on a compiler, and then measuring the performance with a series of relevant and exhaustive benchmarks. Additionally, built-in mechanisms are implemented to allow for imperative optimizations, allowing the compiler to directly skip runtime diffing. When compared to the most popular methods of virtual DOM rendering, these findings showed that Million.js had superior performance, with 133% to 300% more operations per second than other Virtual DOM libraries.

Awards Won:
Third Award of $1,000