

# JavaScript Parallel Code Generator for Computationally Intensive Component

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**Declaration**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

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Dedication

**To My Parents & Family**

# ABSTRACT

Web browsers are ubiquitous applications available on all types of computing platforms. They serve web pages consisting of static components (HTML, CSS, images, links) and dynamic components (scripts). JavaScript is the most commonly used scripting language in web pages. Supported by all major web browsers including Chrome, Opera, Firefox, Safari and IE. The default handling of JavaScript code is done using single User Interface (UI) thread which can become unresponsive when computationally intensive code is executed.

This research aims to generate parallelized JavaScript code for computationally intensive components. We use as parameter code type and variables to generate code which can optimally run in parallel. This optimized parallel code will remove the barrier of single threaded execution by making use of multiple threads employing multiple web workers. Since most of the browsers now support web workers, generated optimized parallel code will be able to run on these browsers. The optimized code will make use of multiple cores available on different architectures including Core i3, Core i5, Core i7 and Xeon processor based machines.

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