Research Assistant position - JavaScript Library Analysis

Duration: 6 months

Timeframe: To commence between June & November, 2016

Supervisor: Alexander Jordan

A 6 month, full-time internship position is available in the Program Analysis group within Oracle Labs, Brisbane, Australia (http://labs.oracle.com/locations/australia).

The position is to commence within the period, June and November, 2016, with a duration of 6 months.

These positions are paid at the current industry rates and travel costs associated with overseas applicants will be reimbursed.

The JavaScript language is notorious for its widely spread and quickly evolving library code, which poses great challenges for program analysis. Pre-analysis of JavaScript libraries provides a potential solution to improve the precision and scalability of JavaScript program analysis. The aim of this project is to explore various approaches to summarise the runtime behaviour of JavaScript libraries (e.g. JQuery, Knockout, RequireJS, Hammer, etc.). The successful candidate will develop a prototype, using techniques such as dynamic analysis, string analysis, automatic stub generation, and program testing to analyse and summarise JavaScript libraries. The successful candidate will be a self-motivated and enthusiast software engineer with strong programming skills.

Oracle Labs is the research arm for Oracle, focusing on applied research that produces new technologies of interest to the company.  Oracle Labs Australia, based in Brisbane, focuses on Program Analysis as it applies to a variety of domains, including bug-checking, security analysis, productivity tools, testing and more.  The group is best known for its research on static code analysis that led to scalable and precise bug-checking algorithms embedded in the Oracle Parfait tool.

This 6 month internship is suitable for students who are currently enrolled in a PhD degree. Exceptional students enrolled in other research programs will also be considered. International research candidates are also welcome to apply.

These internships provide students with valuable industry experience whilst simultaneously allowing them to work on cutting edge research projects that have real world application.

Selection criteria:

- PhD student or Masters student enrolled in Computer Science, Software Engineering or a related area;

- Basic understanding in compiler construction or program analysis;

- Experience in one of the following three languages Java/JavaScript/Scala will be an advantage;

- Demonstrable capacity to work independently and collaboratively.


To apply:

Please submit your resume (including Academic Transcripts) in PDF format, along with your publications and relevant experience to Juliette Hatton - juliette.hatton@oracle.com.  Juliette will coordinate interviews and answer any general questions that you may have.