

Research Assistant position - Precise Points-To Analysis for Large Programs

Duration: 6 months

Timeframe: To commence between June & November, 2016

Supervisor: Paddy Krishnan and Francois Gauthier

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.

Points-to analysis is one of the fundamental static program analysis techniques for object-oriented analysis. While we have made numerous advances in making points-to analysis scalable for large code-bases numerous research challenges remain. These include modular and incremental analysis. Most current analyses assume a single fixed input program. The module structure of the input program is not often used and if the program is modified one tends to recompute the entire points-to set. The aim of this project will be to develop and implement techniques that overcome some of these limitations.

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, program analysis, programming language security 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](mailto:juliette.hatton@oracle.com). Juliette will coordinate interviews and answer any general questions that you may have.