Di Wang

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Education

Peking University, Beijing, China — 2013 - 2017(expected)
B.S. in Computer Science — GPA: 3.84/4 (**top 3** in department)
Received 2014 and 2016 National Scholarships
Selected Courses:

Introduction to Theoretical Computer Science	97	Mathematical Logic	96
Design Principles of Programming Languages	98	Compiler Design	95
Algorithm Design and Analysis	98	Software Analysis	98

Awards

Silver Medal(5th place) in The 39th Annual ACM-ICPC Word Finals	2015
Gold Medal(1st place) in The 39th ACM-ICPC Asia Regionals Anshan site	2014
Gold Medal(9th place) in The 38th ACM-ICPC Asia Regionals Changchun site	2013
Peking University Pacemaker to Merit Student	2016
Peking University Merit Student	2015

Working Papers

1. Hao Tang, **Di Wang**, Yingfei Xiong, Lingming Zhang, Xiaoyin Wang, Lu Zhang, *Conditional Dyck-CFL Reachability Analysis for Complete and Efficient Library Summarization*, **submitted**.
2. Peng Wang, Adam Chlipala, **Di Wang**, *TiML: Complexity Types and Big-O Kinds*, **submitted**.

Research Experience

Massachusetts Institute of Technology — 09/2016 - present
Research Intern, supervised by Prof. Adam Chlipala

- Researching on time-preserving compilation for a functional programming language with asymptotic time complexity annotations.
- Extended Typed Assembly Language with refinement types to model time complexity as the target language and implemented a compiler on type derivation trees.

University of Wisconsin-Madison — 06/2016 - present
Research Assistant, supervised by Prof. Thomas Reps

- Researching on static analysis of software vulnerabilities of algorithmic complexity attacks and side channel attacks.
- Introduced probability into program model and proposed a new abstract domain to analyze expectation invariants i.e. arithmetic relations among expected values of variables.

Peking University — 09/2015 - 10/2016
Research Assistant, supervised by Prof. Yingfei Xiong

- Researched on complete and efficient library summarization for dependency analysis.
- Implemented a tool running conditional CFL reachability analysis to summarize JDK.

Peking University — 07/2015 - 08/2015
Curriculum Design, supervised by Prof. Wenfei Fan

- Proposed a new definition of linear/parallel scalability when the number of cores is far less than the scale of input, and conducted theoretical analysis on several classical problems.
- Proved graph reachability is not linear scalable, and not parallel scalable to some extent.

Curriculum Projects

Melon: A Language with Indexed Types (OCaml)	03/2016 - 06/2016
JStype: A Static Analysis Tool for JavaScript (Java)	09/2015 - 01/2016
uthread: A User-Level Thread Library (C)	11/2015 - 01/2016
OItester: A Judge System for Programming Contests (Ruby, C)	03/2014 - 06/2014

Skills

Programming Languages: C++(>6 years), Ruby(4 years), Racket(3 years), OCaml(1 year).
Technologies: LLVM, Chord, Rails.

Other Activities

Teaching Assistant, *Introduction to Computer Systems*	09/2015 - 01/2016
Vice Chairman, Student Association of Science and Technology of EECS	09/2015 - 09/2016