

# Yi Guo

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## CONTACT INFORMATION

6100 Main St #132  
Department of Computer Science  
Rice University  
Houston, TX 77005 USA

*Office:* (713) 348-2732  
*Mobile:* (832) 768-0690  
*E-mail:* yguo@cs.rice.edu  
*WWW:* www.cs.rice.edu/~yguo

## RESEARCH INTERESTS

Runtime, Multi-core Programming, Compiler Optimizations

## EDUCATION

**Rice University**, Houston, Texas USA

Ph.D. Candidate, Computer Science, December 2008

- Dissertation: “Scalable and Locality-Aware Work-Stealing Schedulers for Multi-Core Processors”
- Advisor: Vivek Sarkar

M.S., Computer Science, May 2007

- GPA: 4.07/4
- Thesis: “On Accelerating the Searches for Compilation Sequences in an Adaptive Compiler”
- Advisor: Keith D. Cooper, Devika Subramanian

**Fudan University**, Shanghai, China

B.S., Computer Science and Engineering, GPA 3.81/4, July, 2004

## RESEARCH EXPERIENCE

**Rice University**, Houston, TX

*Habanero Multicore Software Project* **Jan. 2008 - present**

Principal designer of the work-stealing runtime for Habanero-Java programming language.

*Adaptive Compilation* **May. 2005 - May. 2007**

We study the interaction between compiler transformations and use searching techniques to search for an efficient compilation sequence. The compiler we work on is a low-level research compiler implemented in C.

**Fudan University**, Shanghai China

*Accelerate Multimedia Applications Using SIMD Instructions* **Sep. 2002 - May, 2004**

We use pattern matching to detect vectorization opportunities in the source code of multimedia programs, and rewrite the source program with SIMD intrinsic functions. We achieved an average 10% speedup after vectorization.

## WORK EXPERIENCE **Sun Microsystems Labs**, Menlo Park, CA

*Graduate Research Intern*, May 2008 - Aug 2008

Designed and implemented a new level of intermediate representation in the compiler of the Maxine Java Virtual Machine. Build a path-sensitive data-flow analysis driver on that level.

**Microsoft Cooperation**, Redmond, WA

*Software Developer Intern* May 2007 - Aug 2007

Work in the popfly group. Popfly is a web-based IDE for non-professionals to build web-applications by composition of function blocks.

HONORS AND  
AWARDS

Tietze Fellowship, 2006-2007  
George R. Brown Fellowship, 2005-2006  
Rice University Doctoral Fellowship, 2004  
Intel Fellowship, 2002  
7th Place, Bronze Medal of ACM Programming Contest (ICPC) World Finals, Honolulu, HI, 2002  
*1st Place, Winner* of ACM Programming Contest (ICPC) Asia Region, Hakodate, Japan, 2001  
*Gold Medal*, International Olympiad in Informations, Beijing, China, 2000

PUBLICATIONS

Yi Guo, Rajkishore Barik, Raghavan Raman and Vivek Sarkar “Work-First and Help-First Scheduling Policies for Async-Finish Task Parallelism.” *23rd IEEE International Parallel and Distributed Processing Symposium (IPDPS), May 2009 (to appear)*

Yi Guo and Vivek Sarkar “Scalable and Locality-Aware Work-Stealing Schedulers for Multi-Core Systems.” *Technical Committee on Parallel Processing (TCPP) PhD Forum 2009*

Yi Guo “On Accelerating the Searches for Compilation Sequences in an Adaptive Compiler” *Master Thesis, Rice University 2007*

Yi Guo, Devika Subramanian and Keith D. Cooper “An Effective Local Search Algorithm for an Adaptive Compiler.” *Lecture Notes in Computer Science 2007*

Wei-hua Jiang, Chao Mei, Yi Guo, Jia-hua Zhu, Bin-yu Zang and Chuan-qi Zhu “Vectorization for Real-Life Multimedia Applications on Processors Multimedia Extensions” *Journal of Computers(Chinese), Vol. 8, 2005*