KHAI TRAN

5002 Sheboygan Ave, Apt 258, Madison, WI 53705
608/698-4634, khaitran@cs.wisc.edu

Objective

Research and development position in building and optimizing data processing systems.

Education

Ph.D. Computer Sciences, **University of Wisconsin-Madison**, GPA 3.9/4.0 *Dec 2012 (expected)*

- Area of expertise: database systems
- Thesis: "Concurrency control and data partitioning for OLTP workloads"
- Advisor: Professor Jeffrey F. Naughton

M.S. Computer Sciences, **University of Wisconsin-Madison,** GPA 3.9/4.0 *May 2009*

B.S. Computer Science, Hanoi University of Science and Technology, Vietnam *June 2006*

- **Best Graduate Student Honors**

Experience

Summer Intern, **Google Ads Backend Group**, Mountain View, CA *Summer 2012*

- Designed and implemented MapReduce-based checksum workers for computing checksums of ads tables in Google stats servers.
- Designed and implemented map-only MapReduce-based expansion workers for aggregating data among different versions of ads tables.

Research Assistant, **Microsoft Jim Gray Systems Lab,** Madison, WI *Jan 2009- May 2012*

- Implemented a system in C to run simple database transactions using hardware Transactional Memory, spinlocks, and database locks for concurrency control. Worked with a hardware prototype that does not support C compilers.
- Developed a new concurrency control approach for highly-partitioned OLTP workloads on multicore systems. Implemented the approach in a system running TPC-C transactions without using locking.
- Developed a framework for automatically partitioning OLTP databases. Obtained a good partitioning solution for TPC-E with the framework.

Summer Intern, **Microsoft Research,** Redmond, WA *Summer 2011*

- Optimized and tuned a system, called Deuteronomy, for faster performance.
- Proposed a new threading model to avoid the context switching cost.
- Improved the system performance by a factor of 10.

Summer Intern, **Oracle Server Manageability Group,** Redwood City, CA *Summer 2010*

- Analyzed Oracle 11g to find bottlenecks of the hash-join operator at the runtime.
- Proposed solutions to eliminate the bottlenecks.

Research Assistant, **University of Wisconsin-Madison**, Madison, WI *Summer 2008*

- Analyzed the MapReduce framework on Cell processors to find the bottlenecks.
- Integrated the Cell-sort code into the framework to make it run faster.

Teaching Assistant, **University of Wisconsin-Madison,** Madison, WI *Sep 2007- Dec 2008*

- Instructed students for programming tasks.
- Graded student assignments and exams.

Technical Skills

Languages: C/C++; Java; C#; Perl; Visual Basic; Matlab; R
Parallel programming: Extensive experience with multiprocessor programming
Databases: SQL Server; Oracle; PostgreSQL
Operating Systems: UNIX; Windows
Assemblers: x86; MIP

Awards and Honors

Summer Fellowships, Dept. of Computer Sciences
Honda YES Award for excellent young engineers and scientists
Best Graduate Student Honors, The People's Committee of Hanoi
Microsoft scholarship for top ten excellent Vietnamese Computer Science students
Vietnamese Government Fellowship
Highest Entrance Exam score, Hanoi University of Technology

Publications

Khai Q. Tran, Spyros Blanas, Jeffrey F. Naughton. On Hardware Transactional Memory, spinlocks, and database transactions. Proceedings of ADMS 2010.

References

Prof. Jeffrey F. Naughton
University of Wisconsin – Madison
1210 W. Dayton St., Madison WI 53706
608/262-8737, naughton@cs.wisc.edu

Dr. David Lomet
Principle Researcher, Microsoft Research
14820 NE 36th Street, Redmond, WA 98052
Tel: 425/703-1853, lomet@microsoft.com

Assoc. Prof. AnHai Doan
University of Wisconsin – Madison
1210 W. Dayton St., Madison WI 53706
608/262-9759, anhai@cs.wisc.edu

Dr. Fan Yang
Tech Lead, Google Ads Backend, Bld 41, 1600 Amphitheatre Pkwy, Mountain View, CA 94043
607/342-4541, yangf@google.com