

Apache Software Foundation

Committer and Project Management Committee Member November 2006 to Present

- Implemented support for WSDL 2.0 in the Apache Axis2 web services engine
- Contributed to many Apache Software Foundation web services projects

Virtusa (Pvt) Ltd, Colombo, Sri Lanka

Intern

January 2005 to August 2005

- Involved in developing a project management dashboard for Virtusa. Was involved with the project from its inception to the end

RESEARCH EXPERIENCE

Research Assistant, Purdue University

August 2009 to present

Department of Computer Science and Engineering

- Designed and implemented XJ, a dialect of Java which offers a full-blown hybrid, STM (Software Transactional Memory)/HTM (Hardware Transactional Memory) programming framework that supports closed nested, open nested and boosted transactions
- XJ allows both HTM and STM transactions to run concurrently and shows that open nesting increases the envelope of concurrency and transaction sizes that can be accommodated in hardware
- XJ comprise of a modified javac compiler, a dynamic bytecode rewriting framework based on ASM, a runtime library and a modified version of OpenJDK with support for Intel TSX instructions

TEACHING EXPERIENCE

Purdue University, West Lafayette, IN

Teaching Assistant

- CS 505: Distributed systems
- CS 240: Programming in C

August 2011 to December 2011

January 2012 to May 2012

PUBLICATIONS

- [1] **K. Chapman**, A. L. Hosking, and J. E. B. Moss. Hybrid STM/HTM for nested transactions on OpenJDK. In: *ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, Amsterdam, Netherlands, Nov. 2016. (Can be made available on request)
- [2] **K. Chapman**, A. L. Hosking, J. E. B. Moss and T. Richards. Closed and open nested atomic actions for Java: Language design and prototype implementation. In: *International Conference on Principles and Practice of Programming on the Java Platform: Virtual Machines, Languages, and Tools*, pages 169-180, Cracow, Poland, Oct. 2014. doi:10.1145/2647508.2647525
- [3] **K. Chapman**, A. Hussein, A. L. Hosking. X10 on the single-chip cloud computer: porting and preliminary performance. In: *Proceedings of the 2011 ACM SIGPLAN X10 Workshop*, Article 7 , 8 pages, San Jose, California, 2011. doi:10.1145/2212736.2212743

PAPERS IN SUBMISSION

- [4] **K. Chapman**, A. L. Hosking, and J. E. B. Moss. Structuring a Complex Collaborative Family of Generated Code Variants.