

Samy Al Bahra

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Education

B.S. Computer Science, The George Washington University, 2010.

Academic Experience

The George Washington University, Electrical/Computer Engineering Department

Research Assistant, Arctic Region Supercomputing Center, Summer 2008.

Research Assistant, The George Washington University High Performance Computing Laboratory, Fall 2006 – Spring 2009.

Working Papers

Parallel Programming of High-Performance Reconfigurable Computing Systems with Unified Parallel C, with Tarek El-Ghazawi, Olivier Serres, Miaoqing Huang and Esam El-Araby (RSSI 2008).

Using the PGAS Programming Paradigm for Biological Sequence Alignment on a Chip Multi-Threading Architecture, with Mohamed Bakhouya (PDCS 2008).

High Performance Computing Software

guts, UPC 1.2 standards compliance testing suite for UPC compiler and run-time implementations, with Abdullah Kayi and Olivier Serres (2008).

ubf, a binary file format for FPGA core storage and retrieval with support for SGI RASC and Cray XD1 platforms (2007).

gca, abstract FPGA core invocation framework driven by high-level core descriptions (supports SGI RASC and Cray XD1 platforms) (2007).

libupcio, a high performance reference implementation of the parallel UPC/IO 1.2 specifications, with Kun Xi (2006).

Talks

Conference Presentations

The UPC/IO Library, Specification and Reference Implementation, The Second Partitioned Global Address Space (PGAS) Programming Models Conference, The George Washington University, September 28, 2006.

The TrustedBSD Mandatory Access Control Framework, HackInTheBox 2005, October 3, 2005.

Technical Skills

Computer Architectures

x86, x86_64, ...

Operating Systems

FreeBSD, Linux, Mac OS X, NetBSD, Solaris and more.

Programming Languages

C, Unified Parallel C, Haskell, Java, PHP and more.

Commercial Selection

Magnolia Labs, Inc.

Implemented customer relationship management system with voicemail integration using MySQL, Python and PHP (September 2009).

SureSec, Inc.

Ported the FreeBSD jail facility (for process namespace and resource isolation) to the Mac OS X kernel (October 2006).

Xeca, Inc.

Implemented security improvements to the FreeBSD ARP cache in the form of selectable per-entry per-interface expiration behavior (July 2004).

Subcontractor

Developer of .NET-based camera surveillance system (involved implementing C# protocol stack interface, C# client). Assisted in development and testing of ASP.NET client. Developed with Rui Lopes (October 2003).

Open-Source Selection

svnmanage

Implemented subversion repository, access list and user credentials management software for the George Washington University Department of Electrical and Computer Engineering. Project extended repository metadata to support notion of project ownership (June 2006).

TrustedBSD

Implemented credential-related mandatory access control framework entry points for the FreeBSD kernel. Implemented system hardening policy in the form of a credential access list implementation. Implemented FreeBSD ports for MAC policies (June 2005).

nvclock

Developed native support for the FreeBSD PCI sub-system, with Roderick Colenbrander (August 2003).

wnews

Developer of lightweight RSS news client with ncurses and GTK+ front-ends for POSIX operating systems, with Mohamad Susli and Ulf Lilleengen (December 2002).

Arabeyes

Ported tool for bidirectional text rendering to the FreeBSD platform and worked on software quality assurance through source-code audits (June 2002).

elf

Implemented command-line tool that allows a user to analyze the contents of an ELF file header, with Eirik Nygaard (January 2002).

Additional samples may be found at <http://www.repnop.org> and <http://carte.repnop.org/>

References

Available on request.

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<http://repnop.org/cv-us.pdf>