Celina G. Val

Contact Information

Dept. of Computer Science
Univ. of British Columbia
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Professional Experience

Software Developer Consultant, Vancouver, Canada 11/2012 - present

Main Activities: Developing and optimizing simulation algorithms for Jasper Design Automation.
Collaborated in the development of a trace visualization tool for Jasper Design Automation.

Jasper Design Automation, Belo Horizonte, Brazil 07/2009 - 05/2011

Full-Time R&D Engineer

Main Activities: Developed efficient hardware modeling and abstraction algorithms applied to a hardware formal verification tool (JasperGold®) using C++.
Created tests for implemented algorithms using Tcl, Verilog and VHDL.

Jasper Design Automation, Belo Horizonte, Brazil 09/2008 - 06/2009

Part-Time Research Intern

Main Activities: Improved and fixed bugs in VHDL and Verilog compilation modules using Lex and Bison.
Improved and fixed bugs in circuit modeling inside *JasperGold*®, using C++.

Technical Skills

Languages C/C++, Shell Scripts, Python, Verilog, VHDL, Java, LaTeX

Softwares GNU Make, Gdb, Valgrind, Vim, CVer, JasperGold, Xilinx ISE, NetBeans

Education

The University of British Columbia, Canada 09/2011 - present

Master of Science in Computer Science

Thesis Topic: "Effective Firmware Validation"
Supervisor: Alan J. Hu
Grade Average: 89.3%

Federal University of Minas Gerais (UFMG), Brazil 02/2010 - 08/2011

Master of Science in Computer Science

Thesis Title: "Dynamic Monitoring of Assertions for Post-Silicon Debug"
Supervisor: Claudionor José Nunes Coelho Junior
Grade Average: 92.0%

Federal University of Minas Gerais (UFMG), Brazil 01/2006 - 08/2009

Bachelor of Science in Computer Science

Grade Average: 86.6%

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Honors and Awards

Computer Science Merit Scholarship — Dept. of Computer Science, University of British Columbia, 2011-2013

Second Prize for Best Oral Presentation — X-Meeting - 4^{th} International Conference of The AB3C (Brazilian Association for Bioinformatics and Computational Biology), 2008, for the paper "SIGLa - A Dynamic System to Integrate Laboratory Data Based on Workflow Definition Data" presented by Celina Val

Research Experience

Dept. of Computer Science, The University of British Columbia 09/2011 - Present
Research Assistant at Integrated Systems Design Laboratory
Main Activities: Developed a novel symbolic execution algorithm to software verification. Implementing a tool based on KLEE and LLVM to verify software written in C using such symbolic execution algorithm .

Federal University of Minas Gerais, Belo Horizonte, Brazil 09/2007 - 04/2008
Research Assistant at Computer Engineering Laboratory
Main Activities: Collaborated in the development of an architecture fault tolerant employing runtime verification techniques.
Implemented a MIPS based fault tolerant processor in Verilog and OVL.

Federal University of Minas Gerais, Belo Horizonte, Brazil 04/2008 - 09/2008
Research Assistant at Laboratory of Access Universalization
Main Activities: Collaborated in the development of a system to track samples from the first stage until the final step of protein identification, named PRODIS, using perl, php, MySQL.

Main Refereed Publications

Journal Publication — Safe, G. P.; Coelho, C.; Vieira, L. F. M. ; Val, C. G.; Nacif, J. A. M.; Fernandes, A. O.; "Selection of formal verification heuristics for parallel execution," STTT, vol. 14, no. 1, pp. 95–108, 2012.

Conference Publication — Sam Bayless, Celina Val, Thomas Ball, Holger Hoos and Alan Hu. "Efficient Modular SAT Solving for IC3". To appear in Formal Methods in Computer-Aided Design (FMCAD), 2013.

Alex Horn, Michael Tautschnig, Celina Val, Lihao Liang, Tom Melham, Jim Grundy and Daniel Kroening. "Formal Co-Validation of Low-Level Hardware/Software Interfaces". To appear in Formal Methods in Computer-Aided Design (FMCAD), 2013.

Cardoso, T. N. C.; Val, C. G.; Nacif, J.A.; Fernandes, A.O.; Coelho Jr, C.N.. "Assertion based fault-tolerant processor: How to recover from design errors." IFIP International Conference on Very Large Scale Integration and System-on-Chip, 2008, Rhodes.

Other Interests

Music, Snowboard, Soccer, Dancing, Traveling