

Ioana Burcea

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Gender: Female
Citizenship: Romanian, Canadian

RESEARCH INTERESTS

Micro-architecture, hardware optimizations, memory systems,
chip multiprocessors, hardware-compiler interaction

EDUCATION

- 2004 - present** **Ph.D. Candidate** in Electrical and Computer Engineering – University of Toronto - **GPA:** 4.0
Research Area: Computer Architecture
Research Supervisor: Prof. Andreas Moshovos
- 2002 - 2004** **M.A.Sc.** in Electrical and Computer Engineering – University of Toronto - **GPA:** 4.0
Thesis Title: XToPSS - Efficient XML Filtering Against Large Numbers of XPath Expressions
Thesis Supervisor: Professor Hans-Arno Jacobsen
- 1997 - 2002** **B.Sc.** in Computer Science and Engineering – University Politehnica of Bucharest, Romania
Final GPA: 9.95 (out of 10) – **First** of the 2002 graduating class

REFEREED PUBLICATIONS

- **Ioana Burcea**, Andreas Moshovos – “Phantom-BTB: A Virtualized Branch Target Buffer Design”, *The 14th International Conference on Architectural Support for Programming Languages and Operating Systems* - **ASPLOS 2009**
- **Ioana Burcea**, Stephen Somogyi, Andreas Moshovos, Babak Falsafi – “Predictor Virtualization”, *The 13th International Conference on Architectural Support for Programming Languages and Operating Systems* - **ASPLOS 2008**
- **Ioana Burcea**, Hans-Arno Jacobsen, Eyal de Lara, Milenko Petrovic, Vinod Muthusamy - "Disconnected Operation in Publish/Subscribe Systems" – *The 5th IEEE International Conference on Mobile Data Management* - **MDM 2004**
- Milenko Petrovic, **Ioana Burcea**, Hans-Arno Jacobsen - "S-ToPSS - Semantic Toronto Publish Subscribe System" – *The 29th International Conference on Very Large Data Bases* - **VLDB 2003**
- **Ioana Burcea**, Hans-Arno Jacobsen - "L-ToPSS - Push-Oriented Location-Based Services" – *The 4th International Workshop on Technologies for E-Services* - **TES 2003** - Collocated with VLDB 2003
- **Ioana Burcea**, Milenko Petrovic, Hans-Arno Jacobsen - "I Know What You Mean: Semantic issues in Internet-Scale Publish Subscribe Systems" – *The 1st International Workshop on Semantic Web and Databases* - **SWDB 2003** - Collocated with VLDB 2003

WORK EXPERIENCE

- Jan - July 2009** Research Intern at Intel Labs, Microarchitecture Research Lab, Santa Clara
Manager: Hong Wang; Mentor: Anne Bracy
Implemented a critical path analyzer in Intel's production-quality processor simulator
Implemented and analyzed several replacement and insertion policies for on-chip cache memories
- June 2004** Instructor, da Vinci Engineering Enrichment Program (DEEP), University of Toronto
Designed and delivered a five-day intensive course in object-oriented programming in Java, targeted at gifted high-school students
- May - Aug 2003** Research Intern, IBM Center for Advanced Studies, Toronto
Conducted research on location-based services that led to a poster and demo presentation during the showcase exhibition during the conference of the Centre for Advanced Studies and Collaborative Research - **CASCON 2003**
- 2000 - 2002** Microsoft Student Consultant, University Politehnica of Bucharest, Romania
Delivered presentations about Microsoft technologies
Designed and deliver C++ tutorials to second year students
Supervised student projects in the Microsoft Lab - Computer Science and Engineering Department

SELECTED HONORS AND AWARDS

2005 - 2008	NSERC (NSF equivalent in Canada) Canada Graduate Scholarship (CGS – D3)
2005 - 2006	Ontario Graduate Scholarship (declined)
May - Aug 2003	IBM Center for Advanced Studies (CAS) Fellowship
2002 - 2005	University of Toronto Fellowship
1997 – 2002	Merit grants from the National Ministry of Education, Romania
Oct 2007	University Politehnica of Bucharest, Romania – accepted in the undergraduate program without an entrance examination due to prizes in the Romanian National Mathematics Olympiad
1995 – 1997	Prizes and distinctions from National and District Mathematics Contests, Romania

POSTERS AND PRESENTATIONS

July 2009	“Predictor Virtualization: Teaching Old Caches New Tricks” - invited talk, Intel Corporation, Oregon
Mar 2009	“Phantom-BTB: A Virtualized Branch Target Buffer Design” - presentation at the International Conference on Architectural Support for Programming Languages and Operating Systems - ASPLOS
Mar 2009	“Predictor Virtualization” - poster at the Programming Languages, Operating Systems and Architecture mentoring workshop
Jan 2009	“Predictor Virtualization” - invited talk, Intel Labs, Santa Clara
May 2008	“Predictor Virtualization” - Connections 2008 – ECE Graduate Symposium, University of Toronto Best Talk Award, May 2008
Mar 2008	“Predictor Virtualization” - invited talk, IBM Toronto Lab
Mar 2008	“Predictor Virtualization” - presentation at the International Conference on Architectural Support for Programming Languages and Operating Systems - ASPLOS
Oct 2003	“L-ToPSS – Push-oriented location-based services” – poster and demo presentation at the conference of the Centre for Advanced Studies on Collaborative Research - CASCON
Sept 2003	“S-ToPSS – Semantic Toronto Publish Subscribe Systems” – poster and demo presentation at the International Conference on Very Large Data Bases - VLDB
Sept 2003	“L-ToPSS - Push-Oriented Location-Based Services” – presentation at the 4 th International Workshop Technologies for E-Services, collocated with VLDB 2003
Aug 2003	“Push-Oriented Location-Based Services” – presentation at the IBM Center for Advanced Studies

TEACHING EXPERIENCE

2002 - present	University of Toronto, Electrical and Computer Engineering Department Multiple teaching assistant appointments for the following courses: <ul style="list-style-type: none">• Programming Fundamentals• Computer Fundamentals• Computer Organization• Operating Systems• Data Structures and Algorithms• Systems Design and Technical Communication• Software Engineering II
2002, 2003	University of Toronto, Mechanical and Industrial Engineering Teaching Assistant for Information Systems Infrastructure
2001 - 2002	Politehnica University of Bucharest, Romania Teaching assistant for the following courses: <ul style="list-style-type: none">• Compiler Design• Object Oriented Programming• Numerical Calculus• Data Structures and Algorithms

ADDITIONAL TRAINING

Mar 2009	CRA-W PLOSA Mentoring Workshop, Washington DC
2006 - 2007	Pilot Program PPIT – Prospective Professors in Training – University of Toronto
July 2006	Second International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems (ACACES), L’Aquila, Italy
July 2006	CRA-W and CDC (Coalition to Diversify Computing) Computer Architecture Summer School, Princeton University
May 2006	University of Toronto Teaching Assistants’ Training Program (TATP) Certificate

COMMUNITY INVOLVEMENT

Web Co-Chair

The 17th International Conference on Parallel Architecture and Compiler Techniques (PACT 2008)

Program Committee Member

The 18th International Conference on Database and Expert Systems Applications (DEXA 2007)

External Referee

The 42nd Annual International Symposium on Microarchitecture, 2009 (MICRO 2009)

The 34th Annual International Symposium on Computer Architecture, 2007 (ISCA 2007)

The 40th Annual IEEE/ACM International Symposium on Microarchitecture, 2007 (MICRO 2007)

IEEE International Parallel & Distributed Processing Symposium, 2007 (IPDPS 2007)

The 33rd Annual International Symposium on Computer Architecture, 2006 (ISCA 2006)

The 20th ACM International Conference on Supercomputing, 2006 (ICS 2006)

The 5th ACM/IFIP/USENIX International Middleware Conference, 2004 (Middleware 2004)

The 29th International Conference on Very Large Data Bases, 2003 (VLDB 2003)

Member of ACM

Member of Special Interest Group on Computer Architecture (SIGARCH)