

## Antal A. Buss

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Parasol Laboratory  
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### Research Interests

Parallel programming, parallel systems, computational science, programming languages, formal methods, concurrent calculus, human-computer interaction

### Education

- Ph.D. in Computer Science**, Texas A&M University, College Station, Texas USA (expected graduation date: 2011)  
Advisor: Professor Nancy Amato
- M.S. in Engineering, emphasis in Computer Science**, Universidad del Valle, Cali, Valle, Colombia, 2008  
Thesis: “Rigid Body Molecular Dynamics on GPUs”  
Advisor: Professor Andrés Jaramillo-Botero
- B.S. in Computer Science**, Pontificia Universidad Javeriana, Cali, Valle, Colombia, 1999  
Thesis: “MAPiCO: Abstract Machine for PiCO Calculus” (*Mencion de Honor*)  
Advisor: Gabriel Tamura

### Honors & Awards

- Industrial Affiliates Program scholarship, Department of Computer Science, Texas A&M, USA *2007 - 2009*
- Broader Engagement grant recipient, Supercomputing Conference *2008, 2009*
- Colciencias-LASPAU (Fulbright) Scholarship, Colombia/USA *2007 - 2010*
- Profesor Destacado, Facultad de Ingeniería, Pontificia Universidad Javeriana, Cali, Colombia *2007*
- Mención de Honor* in B.S. Thesis, Facultad de Ingeniería, Pontificia Universidad Javeriana, Cali, Colombia *1999*

### Professional Experience

- Research Assistant** *Fall 2007 – Present*  
Department of Computer Science, Texas A&M University  
College Station, Texas, USA  
Working on the Standard Template Adaptive Parallel Library (STAPL), a parallel superset of the C++ Standard Template Library.
- Teaching Assistant** *Fall 2009*  
Department of Computer Science, Texas A&M University  
College Station, Texas, USA  
Assisted Prof. Amato in CPSC 620: Computational Geometry, a graduate course.
- Research Professor and Lecturer** *2000 - 2007*  
Department of Computer Science, Pontificia Universidad Javeriana

Cali, Valle, Colombia

Working on the following projects:

- Time lower bound modeling and simulation of complex, rigid and flexible, articulated body systems (2006-2007)
- Herramientas para desarrollo de aplicaciones con interfase oral enfocadas al idioma español Colombiano. (2003-2004)
- Interface oral para lectura de noticias en Internet. (2002-2003)

Courses taught (Undergrad):

- Introduction to Parallel Programing (Summer 2009)
- Operating Systems (2000-2007)
- Network and Web programming (2004-2007)
- Introduction to Data Structures (2002-2003)
- Introduction to Programing (2000-2004)

### **System Administrator**

2001 - 2007

Department of Computer Science, Pontificia Universidad Javeriana  
Cali, Valle, Colombia  
Computer Science laboratory administration

### **Software Designer**

1999 - 2000

IP Total Software  
Cali, Valle, Colombia  
Working on design a ISP administration software.

### **Research Assistant**

1998 - 1999

Department of Computer Science, Pontificia Universidad Javeriana  
Cali, Valle, Colombia  
Working on CORDIAL, a visual, concurrent constraint, object-oriented programming language.

## **Publications**

Gabriel Tanase, Xiabing Xu, Antal Buss, Timmie Smith, Nathan Thomas, Mauro Bianco, Nancy Amato and Lawrence Rauchwerger, "The STAPL pList", In *Wkshp. on Lang. and Comp. for Par. Comp. (LCPC)*, Oct 2009.

A. Buss, T. Smith, G. Tanase, N. Thomas, M. Bianco, N. Amato, L. Rauchwerger, "Design for Interoperability in STAPL : pMatrices and Linear Algebra Algorithms", In *Wkshp. on Lang. and Comp. for Par. Comp. (LCPC)*, Jul 2008. Also, *Lecture Notes in Computer Science*, 5335/2008:304-315, 2008.

Antal A. Buss. "A Tutorial on MPI and OpenMP for Strictly Parallel Molecular Simulations" In: *PASI - Computational Nanotechnology and Molecular Engineering Workshop*, 2005. Cali, Colombia.

Alina Almira, Antal A. Buss, Gloria Alvarez, Diego Linares. "Arquitectura para Aplicaciones con Interfaz Oral". *Energía y Computación.* , v.12, n.1, p.32 - 37, 2005.

Andres Jaramillo-Botero, Antal A. Buss. "How to build a Beowulf-type Supercomputing Cluster" In: *Pan American Advanced Studies Institute in Computational Nanotechnology and Molecular Engineering*, 2004, Pasadena, CA.

Miguel Garcés, Paula Muñoz, Alina Almira, Gloria Álvarez, Antal Buss y Diego Linares. "Aplicación educativa e interactiva comandada por voz para apoyar el proceso de aprendizaje de lectura del código

Braille en niños invidentes”. *Fundación Duques de Soria*, 2004. Soria, Spain.

Antal A. Buss, Alina Almira, Gloria Alvarez, Diego Linares, Ernesto Castro. “Interfaz Oral para Lectura de Noticias en Internet” In: *I Congreso Colombiano de Bioingeniería e Ingeniería Biomédica*, 2003, Medellin, Colombia.

Antal A. Buss, Mauricio Heredia, Gabriel Tamura. “MAPiCO: An Abstract Machine For The PiCO Calculus” In: *XXVI Conferencia Latinoamericana de Informática - CLEI2000*, 2000, México.

### Professional Activities

Member of Association for Computing Machinery (ACM)

Member of Sociedad Colombiana de Computación (SCo<sup>2</sup>)

Debian Package Maintainer (in process to become a Debian Developer)

Co-Founder/Leader of Pontificia Universidad Javeriana Linux Users and Enthusiasts (PUJCLUE), Student group, (1997-2007)

Debian Colombia member

### Student Research Mentoring

Undergraduate Summer Research Mentor

- Lena Olson, implemented and testing a specialization for parallel matrix multiply algorithm, CRA-W DMP Program, Summer 2008
- Adam Fidel, implemented a specialization for parallel matrix multiply algorithm, CRA-W DMP Program, Summer 2008

Supervised of three undergraduate projects in the Department of Computer Science and Engineering of Pontificia Universidad Javeriana - Cali, Colombia:

- Carolina Téllez and Diego F. Polo, “Proceso de reingeniería del editor de CORDIAL”, 2002.
- Alba L. Sarasti and Carlos A. Llano, “Reimplementación de la Máquina Abstracta MAPiCO”, 2007.
- Juan P. Rojas and Andres F. Villegaz, “MODEPROS: Módulo de Detección y Procesamiento de Sombras Para Sistemas de Interacción Humano-Computador”, 2008

### Technical Skills

**Programming:** C, C++, Python, Scheme, Mozart, Tcl/Tk, Perl, GLSL, UNIX shell scripting, HTML, L<sup>A</sup>T<sub>E</sub>X

**Operating Systems:** UNIX (GNU/Linux, Solaris), Microsoft Windows and MacOS