Curriculum Vitae

Pedro Vaz Artigas
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Academic Record

- (August 2000) Ph.D. Candidate, Computer Science Department, Carnegie Mellon University.
- (July 2000) M.Sc. Degree, Electrical Engineering, University of São Paulo, Brazil. Graduated *summa cum laude.*
- (Dec 1996) B.S. Degree, Electrical Engineering, University of São Paulo, Brazil. Graduated *magna cum laude*, top 1% among more than 500 students.

Referred Publications

- (Mar 2005) "Dataflow: A Complement to Superscalar", International Symposium on Performance Analysis of Systems and Software (ISPASS05).
- (Jan 2001) "The NINJA project - Making Java work for high performance numerical computing", Communications of the ACM, October 2001.
- (June 2000) "Automatic Loop Transformations and Parallelization for Java", a summarized version of the ICS2000 paper, Parallel Processing Letters (PPL 2000)
- (May 2000) "Automatic Loop Transformations and Parallelization for Java", International Conference on Supercomputing (ICS2000).
- (Feb 2000) "Java Programming for High Performance Numerical Computing", IBM Systems Journal 2000.
- (Aug 1999) "High performance numerical computing in Java, language and compiler issues", Languages and Compilers for Parallel Computing 99 (LCPC99).
- (Aug 1995) "um sistema automático para obtenção de paralelismo e localidade de dados", in XV Congresso da Sociedade Brasileira de Computação; sponsored by SBC-CLEI-UFRGS.

Work Experience

- (Aug 2000 -) Research Assistant at Carnegie Mellon University, researching on optimizing compilers and computer architecture. Wrote several static and profile based compiler passes. Updated a detailed architectural simulator to evaluate dynamic optimization opportunities. Designed and implemented a simple architectural simulator for limit studies in dynamic optimization and program slicing. Designed and implemented multiple compiler passes for a hardware compiler.

- (Nov 1998 - Nov 1999) Co. Op. Student at IBM T.J. Watson Research Center, researching on high performance numeric Java compilers. Implemented compiler transformations that enable the use of true multidimensional arrays in Java using semantic expansion, designed and implemented compiler transformations that minimize the cost of exception checks in Java and provide precise alias information, enabling high order transformation and parallelization of numerically intensive Java programs.
- (Feb 1997 - Nov 1998) System developer at Scopus Tecnologia, designed and implemented systems that integrate banking services with the Internet. Designed and implemented a smart card solution framework. Implemented a smart-card based, Internet enabled, digital money system. Designed and implemented a SET enabled wallet software for e-commerce. Designed and implemented an Active-X based framework that enables the rapid development of Internet banking systems using the Active Server Pages technology.
- (Jan 1995 - Dec 1996) Research assistant at Laboratório de Sistemas Integráveis (LSI), USP, researching on compilers, High Order Transformations and Parallelization. Implemented a tool that selects high order transformations to be manually applied in scientific code to maximize both parallelism and data locality.
- (Jan 1993 - Dec 1993) Trainee at SEADE, development of integrated databases. Designed and implemented database solutions to store census data.

Teaching Experience

- (Jan 2003 - May 2003) Teaching Assistant, Carnegie Mellon University, for 15-745 "Optimizing Compilers for Modern Architectures" (Ph.D. Level). Professor: Todd C. Mowry. TA Evaluation: Excelent.
- (Sep 2001 - Dec 2001) Teaching Assistant, Carnegie Mellon University, for 15-411 "Compiler Design" (Senior Level). Professor: Seth Copen Goldstein.

Awards

- (Feb 1997) Received the "Armando Álvares de Penteado" award; awarded each year to the three highest performing senior students at the Escola Politécnica da Universidade de São Paulo.
- (Nov 1995) Received the "Unibanco" award for academic excellence.

Knowledge in Computer Programming, Operating Systems

- Solid knowledge in UNIX (AIX, Linux and Solaris) and Windows, Windows NT operating systems; Local Area Networks and TCP/IP networking. Experienced programmer in C, C++, Java and Perl programming languages.
- Widespread knowledge of the POSIX and Win32 APIs, the CORBA object model, the Microsoft Foundation Classes (MFC), Active Template Library (ATL) Framework and the Microsoft-COM object model.

Languages

- Portuguese: Native speaker.
- English: Advanced reading, writing and speaking skills, obtained the First Certificate in English from University of Cambridge, the TOEFL computer based test score is 283.
- Spanish: Advanced reading, speaking and writing skills.