Erika Fuentes

Contact Information

Innovative Computing Laboratory
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Objective

To find a position in software engineering or research and development that will allow me to both excercise and improve my current skills as a computer scientist, allowing me to be creative and innovative and to participate in new and challenging projects.

Research Interests

- Adaptive systems, Machine Learning, Data Mining, Statistical Applicaiton Algorithms
- Sparse linear systems and Iterative methods: Algorithms and behavior
- Scientific computing, Parallel and distributed systems

Education

PhD. in Computer Science
December 2007
University of Tennessee, Knoxville
Major GPA: 3.9/4.0
Specialization: Data Mining, Statistical Analysis and Machine Learning, Linear Algebra Sparse Libraries and Algorithms

M.S. in Computer Science
May 2002
University of Tennessee, Knoxville
Major GPA: 3.8/4.0
Specialization: Networking Protocols and Optimization, Operating Systems, Logistical Networking

B.S. in Computer Engineering
June 1997
Institute of Technology and Superior Studies of Monterrey (I.T.E.S.M.)
Mexico City, Mexico
Major GPA: 3.9/4.0
Specialization: Compilers and Artificial Intelligence

Professional Experience

Innovative Computing Laboratory
Computer Science Department, University of Tennessee
June 2002 - Present
Research Assistant (Dr. Jack Dongarra):

- Collaborating in the SANS-Effort project
- Participating in the Self-Adaptive Large-scale Solver Architecture (SALSA) project
- Responsible for the development of the intelligent agent, knowledge database, adaptive modules, and their respective interfaces for the SALSA project
- Teaching Assistant for the course "Scientific Computing for Engineers" (2007)

LoCi Laboratory
Computer Science Department, University of Tennessee
April 2001 - June 2002

Research Assistant (Dr. Micah Beck and Dr. James Plank):
◦ Collaborated in the Internet Backplane Protocol (IBP) distributed computing project
◦ Responsible for the design and development of the Data Movers subproject of IBP

Innovative Computing Laboratory
Computer Science Department, University of Tennessee
August 1999 - April 2001
Research Assistant (Dr. Jack Dongarra):
◦ Collaborated in System and Network Administration of UNIX and Windows environments for workstations, servers and clusters

Datasys of America Internet Services
Mexico City, Mexico
June - July 1999
Software Engineer, Technical Support and System Administration:
◦ Responsible for designing and developing software projects for Internet applications in Linux and Windows platforms

InterSoftware Consulting and Development Group
Mexico City, Mexico
1997 - 1999
Project Manager and Software Engineer:
◦ Responsible for designing and developing software projects for Windows and UNIX platforms
◦ Design, analysis, development and management of the Talent Review System for Warner Lambert Mexico
◦ Collaborated in the implementation and programming Inventory System for the retail company "El Palacio de Hierro, S.A."

SPS Consulting Group
Mexico City, Mexico
1996
Software Engineer and Developer:
◦ Collaborated in the design and implementation of software projects using Lotus Notes
◦ Supervised and supported the development of UNIX platform projects

Related Coursework and Programming

◦ Programming Languages and Scripting: C, Matlab, C++, Perl, Visual Basic
◦ Parallel Architectures and MPI Programming
◦ Operating Systems
◦ Pattern Recognition
◦ Parallel Computing
◦ Grid Computing
◦ Statistical Data Mining, Experimental Analysis
◦ Special Topics in Data Analysis
◦ Theoretical foundations and Algorithms
◦ Distributed and High Performance computing
◦ Numerical Analysis and Linear Algebra
◦ Advanced Architectures Systems
◦ Artificial Intelligence
◦ Advanced Research in Machine Learning
◦ Emergent Algorithm Methods
◦ Complex Systems
◦ Markov Chains

Honors, Awards and Societies

- (2003) Member of $\Upsilon\Pi E$ Computer Science International Honor Society
- Member of $IEEE$ and ACM
- (1997) Graduated with Honors as top of the class for the major of B.S. in Computer Engineering
- (1997) Honors Top-Student Diploma from the Institute of Technology and Superior Studies of Monterrey
- (1993-1997) Excellence Scholarship from the Institute of Technology and Superior Studies of Monterrey
- (1996) Distinguished Honors-Student Award from the Institute of Technology and Superior Studies of Monterrey
- (1993) Distinguished Country-wide Student Award from the National University of Mexico

Publications and Conferences

- Fuentes, E., *"Statistical and Pattern Recognition Techniques Applied to Algorithm Selection for Solving Linear Systems"*, to be presented at: SC07 International Conference for High Performance, Computing, Netowrking, Storage and Analysis (Doctoral Research Showcase), Reno, NV, 2007.

- Fuentes, E., *"Statistical and Machine Learning Techniques Applied to Algorithm Selection for Solving Linear Systems"*, Poster presented at: Grace Hopper Celebration: Women in Computing, Orlando, FL, 2007.

- Bhowmick, S. and Eijkhout, V. and Freund, Y. and Fuentes, E. and Keyes, D., *Application of machine learning to selecting solvers for sparse linear systems*, Presentation at the 2006 SIAM Conference on Parallel Processing, 2006.

- Bhowmick, S., Eijkhout, V., Freund, Y., Fuentes, E., Keyes, D., *"Machine Learning Applied to Algorithm Selection for Sparse Linear Systems"*, to appear in: The International Journal of High Performance Computing Applications, 2006.

- Bosilca, G., Chen, Z., Dongarra, J., Eijkhout, V., Fagg, G., Fuentes, E., Langou, J., Luszczek, P., Pjesivac-Grbovic, J., Seymour, K., You, H., Vadhiyar, S. *"Self Adapting Numerical Software (SANS) Effort"* IBM Journal of Research and Development, Vol. 50, no. 2/3, 2006.

- Eijkhout, V., Fuentes, E., Eidson, T., Dongarra, J. *"The Component Structure of a Self-Adapting Numerical Software System,"* International Journal of Parallel Programming, Vol. 33, no. 2, June, 2005.

- Demmel, J., Dongarra, J., Eijkhout, V., Fuentes, E., Petitet, A., Vuduc, R., Whaley, R.C., Yelick, K. *"Self Adapting Linear Algebra Algorithms and Software,"* IEEE Proceedings, 2004.

- Fuentes, E. *"Numerical Metadata API Reference,"* Innovative Computing Laboratory Technical Report, Presented at SuperComputing 2003, Phoenix AZ, ICL-UT-03-03, November 21, 2003.

- Eijkhout, V., Fuentes, E. *"A Proposed Standard for Matrix Metadata,"* Innovative Computing Laboratory Technical Report, presented at SuperComputing 2003, Phoenix AZ, ICL-UT-03-02, November, 2003.

- Fuentes, E., *"Bayes Theorem Application in Data Mining,"* Advancements in Data Mining, Edited by M. Berry, Ch. 1, World Scientific Publishing of Hackensack, NJ, 2006.

- Beck, M., Fuentes, E., *"An Exposed Approach to Reliable Multicast in Heterogeneous Logistical Networks"* Presented In Workshop on Grids and Advanced Networks, Tokyo, Japan, May 12-15, 2003.

- Beck, M., Fuentes, E., Plank, J., *et all, "Logistical Storage Resources for the Grid; In the Proceedings of the International Conference on Computational Science"* ICCS 2002, Part II, LNCS 2330, Springer Verlag 2002.

References

Available upon request.