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Research Fields

- High performance computing – parallel programming and analysis of parallel scientific workloads
- Performance analysis – performance evaluation of applications, design of novel architectures for performance enhancement
- Statistical modeling / data mining – performance modeling of computer and processor systems, pricing models
- Storage systems – parallel file systems, optimizations for high performance file systems, storage architectures

Education

Northwestern University Ph.D. in Electrical Engineering and Computer Science, December 2009. Advisor: Professor Alok Choudhary Thesis: Analysis, Characterization and Design of Data Mining Applications and Applications to Computer Architecture	GPA: 3.98/4.00	Evanston, IL
Bogazici University B.S. in Computer Engineering, June 2004. Ranked 2 nd in the department (out of 60 students)	GPA: 3.81/4.00	Istanbul, Turkey
Marmara University Computer Engineering, 2000-2001 Ranked 1 st in Engineering School (out of 400 students)	GPA: 3.96/4.00	Istanbul, Turkey

Work Experience

Northwestern University Postdoctoral Fellow in Electrical Engineering and Computer Science. Jan 2010 - Present	Evanston, IL
NVIDIA, Software Engineering <i>Graduate Intern</i> , Summer 2008 Worked on Driver Validation System (DVS) 3 project Worked on Scaling current system upto 3000 systems Designed, implemented, and executed performance tests Surveyed and analyzed different schedulers and scheduling issues for the DVS3 system to improve performance	Durham, NC
Oak Ridge National Laboratory, Computer Science and Mathematics Division <i>Graduate Intern</i> , Summer 2005 Collaborated on Parallel-R project which helps to parallelize sequential R scripts Enhanced and optimized the design document of Parallel-R Developed software to interface MPI programs with R environment which would provide linear speedups	Oak Ridge, TN
IBM, Personal Computer Division <i>Undergraduate Intern</i> , Summer 2003 Evaluated IBM products distributed with newly purchased PCs Prepared documentation and manuals Coordinated with customer to design, and customize products	Istanbul, Turkey
Aknet Bilgi Islem Sanayi ve Ticaret A.S (AKBANK) <i>Undergraduate Intern</i> , Summer 2002 Worked at Branch Office Systems about software development Analyzed different commercial corporate portals Developed and integrated functional additions to the corporate portal project	Istanbul, Turkey

Academic Experience

Northwestern University, Dept. of Electrical Engineering and Computer Science <i>Research Assistant</i> , 2004–2009 Member of Center for Ultra-scale Computing and Information Security (CUCIS). Active member in the Design, Development and Evaluation of High Performance Data Mining Systems project. Member of Microarchitecture Research Laboratory <i>Teaching Associate</i> , Fall 2006: Analytical Marketing and Customer Relationship Management. SPSS Clementine Tutoring	Evanston, IL
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Teaching Associate, Spring 2006: Database, Information and Decision Support Systems.

Teaching Associate, Fall 2005: Introduction to Parallel Computing. Took part in the lecturing process as well.

Teaching Associate, Spring 2005: Numerical Methods for Engineers.

Bogazici University, Dept. of Computer Engineering

Istanbul, Turkey

Undergraduate Teaching Assistant, Fall 2003 and Spring 2004

Introduction to Computers. Designed and lectured in lab sections including homework and lab exam.

Publications

- [1] S. W. Son, S. Lang, P. Carns, R. Ross, R. Thakur, **B. Ozisikyilmaz**, P. Kumar, W. Liao, A. Choudhary. Enabling Active Storage on Parallel I/O Software Stacks. In Proc. of the Symposium on Massive Storage Systems and Technologies. May 2010.
- [2] Y. Zhang, **B. Ozisikyilmaz**, G. Memik, J. Kim, A. Choudhary. Analyzing the Impact of On-chip Network Traffic on Program Phases for CMPs. In Proc. of the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), April 2009.
- [3] A. Das, **B. Ozisikyilmaz**, S. Ozdemir, J. Zambreno, G. Memik and A. Choudhary. Evaluating the Effects of Cache Redundancy on Profit. In Proc. of the International Symposium on Microarchitecture (MICRO), November, 2008.
- [4] **B. Ozisikyilmaz**, G. Memik, and A. Choudhary. Machine Learning Models to Predict Performance of Computer System Design Alternatives. In Proc. of the International Conference on Parallel Processing (ICPP), September 2008.
- [5] **B. Ozisikyilmaz**, G. Memik, and A. Choudhary. Efficient System Design Space Exploration Using Machine Learning Techniques. In Proceedings of The Design Automation Conference (DAC), June 2008.
- [6] A. Shye, **B. Ozisikyilmaz**, G. Memik, P Dinda, R Dick, A. Choudhary. Learning and Leveraging the Relationship between Architecture-Level Measurements and Individual User Satisfaction. In *Proc. of the International Symposium on Computer Architecture (ISCA)*, June 2008.
- [7] A. Shye, L. Yang, X. Chen, **B. Ozisikyilmaz**, A. Mallik, B. Lin, P. A. Dinda, G. Memik, R. P. Dick. Empathic Computer Architectures and Systems. *ACM Architectural Support for Programming Languages and Operating Systems (ASPLOS) - Wild and Crazy Ideas VI (WACI)*, March 2008.
- [8] R. Narayanan, **B. Ozisikyilmaz**, G. Memik, J. Zambreno and A. Choudhary. Quantization Error and Accuracy-Performance Tradeoffs for Embedded Data Mining Workloads. In *Proc. of 10th International Workshop on High Performance Data Mining (HPDM)*, May 2007.
- [9] A. Choudhary, R. Narayanan, **B. Ozisikyilmaz**, G. Memik, J. Zambreno, and J. Pisharath. Optimizing Data Mining Workloads using Hardware Accelerators. In *Proc. of the 10th Workshop on Computer Architecture Evaluation using Commercial Workloads (CAECW-10)*, February 2007.
- [10] R. Narayanan, **B. Ozisikyilmaz**, J. Zambreno, G. Memik, and A. Choudhary. MineBench: A Benchmark Suite for Data Mining Workloads. In *Proc. of the International Symposium on Workload Characterization (IISWC)*, October 2006.
- [11] **B. Ozisikyilmaz**, R. Narayanan, J. Zambreno, G. Memik, and A. Choudhary. An Architectural Characterization Study of Data Mining and Bioinformatics Workloads. In *Proc. of the International Symposium on Workload Characterization (IISWC)*, October 2006.
- [12] J. Pisharath, J. Zambreno, **B. Ozisikyilmaz**, and A. Choudhary. Accelerating data mining workloads: current approaches and future challenges in system architecture design. In *Proc. of the 9th International Workshop on High Performance and Distributed Mining (HPDM)*, April 2006.
- [13] J. Zambreno, **B. Ozisikyilmaz**, J. Pisharath, G. Memik, and A. Choudhary. Performance characterization of data mining applications using MineBench. In *Proc. of the 9th Workshop on Computer Architecture Evaluation using Commercial Workloads (CAECW-9)*, February 2006.
- [14] O. T. Yildiz, B. Turhan, **B. Ozisikyilmaz**, H. Ozgur, B. Mecit, and D. Unat. HTML. In *Introduction to Computers*, Bogazici University Press, 2004.

Patents

Alex Shye, **Berkin Ozisikyilmaz**, Arindam Mallik, Gokhan Memik, Peter A. Dinda, Robert P. Dick, and Alok N. Choudhary. Learning and Leveraging the Relationship between Architecture-Level Measurements and Individual User Satisfaction. Patent pending. 20818US01 (NU 29083)

Technical Skills

Programming: C, C++, Java, Perl, Python, MPI, OpenMP, Pthreads, CUDA/GPU, Html, Assembly, Pascal, Jsp, Prolog.

Software: Intel Vtune Performance Analyzer, SPSS Clementine datamining software, R statistical computing environment, XLSTAT (Statistical addon for Excel), TIGR MultiExperiment Viewer (MeV), Mentor Graphics, Matlab, PTLsim (x86 out of order microprocessor simulator), Simics.

Methodologies: Parallel programming, object oriented programming, simulation.

Honors, Awards and Affiliations

- The Hikmet Nuri Anter RC'27 Award for Excellence in Mathematics and Science, 2000
- ASHME (American High School Mathematics Examination) Participation Certificate 2000, Istanbul.
- High honor graduation award from Bogazici University, 2004