Byung S. Lee
Associate Professor of Computer Science

Education
B.S., Electronics Engineering, Seoul National University, 1980
M.S. Electrical Engineering, Korea Advanced Institute of Science and Technology, 1982
Ph.D., Electrical Engineering (Computer Systems Laboratory), Stanford University, 1991

Research Areas
Database query processing
Data stream processing
Wireless sensor networks data management

Courses
Database Systems, Advanced Database Systems,
Data Structures, Algorithms,
Computer Organizations

Dr. Lee joined academia with a decade of experiences in defense and industrial sectors. Since he joined the University of Vermont in 1999, he has been actively pursuing research in the areas of large-scale scientific simulation data exploration, web data caching, XML document storage and retrieval, multidimensional indexing, object-relational database query optimization, and time series processing, His current research focus is in the areas of data stream processing and wireless sensor network data management.

Dr. Lee was a Participating Guest at Lawrence Livermore National Laboratory through his collaboration on a DoE national project, and received a grant from DoE ($439,917) based on the collaboration. He also received an NSF grant ($480,000*)* and a Vermont EPSCoR grant ($50,000) for projects based on the continuations of the DoE-funded research. He has published 45 papers in reputed journals and conferences, and has one patent pending and one provisional patent filed out of his recent research outcomes.

Dr. Lee's teaching covers mostly systems and algorithms and is characterized by his emphasis on intuitive and practical understanding of the subjects.

Dr. Lee has been active in the professional community as well. He served at fourteen international conferences as a program committee member, a publicity chair, or a special session organizer, and is currently chair of the Workshop on Scalable Stream Processing Systems (SSPS) to be collocated with the EDBT'08 conference. He also served on the review panels of federal agencies like NSF and DoE, and is on the editorial boards of two international journals (J. Infonomics and J. Comp. Sci & Eng.)

Selected Recent Publications:

- Z. He, X.S. Wang, B.S. Lee, A.C.H. Ling, "Mining Partial Periodic Correlations in Time Series," *Knowledge and Information Systems.* (in press).
- D. Fuchs, Z. He, B.S. Lee, "Compressed Histograms with Arbitrary Bucket Layouts for Selectivity Estimation," *Information Sciences*, 177(3): 680-702, February 2007.
- Z. He, B.S. Lee, R. Snapp, "Self-Tuning Cost Modeling of User-Defined Functions in an Object-Relational DBMS," *ACM Transactions on Database Systems*, 30(3): 812-853, September 2005.
- B.S. Lee, L. Chen, J. Buzas, V. Kannoth, "Regression-Based Self-Tuning Modeling of Smooth User-Defined Function Costs for an Object-Relational Database Management System Query Optimizer," *The Computer Journal*, 47(6): 673-693, November 2004.

Current Research Funding:
- P.I. for "A framework for Optimal Approximate Query Evaluation based on Workload Forecasting", National Science Foundation, 08/01/04--07/31/08 ($480,000), co-PIs: X. S. Wang, Z. He.