Navneet Panda

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Education

Indian Institute of Technology, Kharagpur, India (May 2000)
B.Sc. in Mathematics and Computing, (GPA 8.38/10.00)

Indian Institute of Technology, Kharagpur, India (May 2002)
M.Sc. in Mathematics and Computing, (GPA 8.63/10.00) Advisor: Prof. Pawan Kumar

University of California, Santa Barbara, California (Dec 2006)
Ph.D. in Computer Science, (GPA 3.98/4.00)

Academic Honors

President of India Silver Medal for Outstanding Academic Achievement at *Indian Institute of Technology* (2002)

J. C. Ghosh Memorial Award at *Indian Institute of Technology (Highest GPA in Mathematics and Computing)* (2002)

President's Work Study Award for 2004-2005, UCSB (2004)

Research formed part of successful NSF Proposal titled "Scalable, Multimodal Algorithms for Multimedia Information Retrieval" (IIS-0535085) (2006)

Publications

Journal Papers:

- KDX: An Indexer for Support Vector Machines,
  Navneet Panda and Edward Y. Chang
  (Transactions of Knowledge and Data Engineering, TKDE June 2006)
- Active Learning in Very Large Databases,
  Navneet Panda, Kingshy Goh and Edward Y. Chang (Journal of Multimedia Tools and Applications Special Issue on Computer Vision Meets Databases)

Conference Full Papers:

- Efficient Top-k Hyperplane Query Processing for Multimedia Information Retrieval
  Navneet Panda and Edward Y. Chang
  (ACM International Conference on Multimedia, MM Oct. 2006)
- Concept Boundary Detection for Speeding up SVMs
  Navneet Panda, Edward Y. Chang and Gang Wu
  (International Conference on Machine Learning, ICML June 2006)
- Exploiting Geometry for Support Vector Machine Indexing,
  Navneet Panda and Edward Y. Chang
  (SIAM International Conference on Data Mining, SDM April 2005)
- Hypersphere Indexer,
  Navneet Panda, Edward Y. Chang, and Arun Qamra
  (Database and Expert Systems Applications, DEXA Sep. 2006)
- Formulating Context-dependent Similarity Functions,
  Gang Wu, Navneet Panda and Edward Y. Chang
  (ACM International Conference on Multimedia, MM 2005*)*

Short Papers:

- Formulating Distance Functions via the Kernel Trick
  Gang Wu, Navneet Panda and Edward Y. Chang
  (ACM Intl. Conference on Data Mining and Knowledge Discovery, KDD 2005*)*

Submitted Papers:

- Approximate SVM Classification for Data Streams
  Navneet Panda and Ching-Yung Lin (IBM Technical Report, Aug 2005)
- Improving Accuracy of SVMs by Allowing Support Vector Control,
  Navneet Panda, Gang Wu and Edward Y. Chang (UCSB Technical Report, 2004)

Masters Thesis: Scheduling Algorithms for hierarchical and non-hierarchical tasks in a distributed environment

Professional Experience

Summer Intern:

- IBM T. J. Watson Research Center, Hawthorne, New York (June 2005 - Sep 2005)
  Speeding up classification of streaming data using SVMs: Developed fast approximate techniques for classification of video content from television. The twin goals of speed and accuracy were achieved by clustering the support vectors and optimal weighting of cluster centers.
  Reference: Ching-Yung Lin and Lisa D. Amini
- Intel Research, Santa Clara, California (June 2006 - Sep 2006)
  Improving quality and speed of image retrieval in personalized un-annotated databases: Given a collection of un-annotated personal images the goal was to use exemplars readily available from the web in order to search within the personal collection. Developed fast accurate concept detector to extract relevant content from web exemplars which was then used to retrieve similar images from personal collection.
  Reference: Available on request

Research Assistant: Multimedia Database Group, University of California, Santa Barbara (Sep 2003-present) Advisor: Edward Y. Chang

Patents

Website Duration Performance Based on Category Durations,
Navneet Panda, James A. Kunz (Google Inc.) (Granted 9,171,086)

Selectively Generating Alternative Queries,
Navneet Panda, April R. Lehman, Trystan G. Upstill (Google Inc.) (Granted 9,135,307)

Site Quality Score
April R. Lehman and Navneet Panda (Google Inc.) (Granted 9,031,929)

Learning Concept Templates from Web Images to Query Personal Image Databases,
Navneet Panda, Yi Y. Wu, Jean-Yves Bouguet, Ara Nefian (Granted 8,958,661)

Ranking Search Results,
Navneet Panda and Vladimir Ofitserov (Google Inc.) (Granted 8,682,892)

Locally Significant Search Queries,
Trystan G. Upstill, Oleksander Grushetskyy, Andrei Damian, Navneet Panda and Aysel Ozgur (Google Inc.) (pending)

Projects

Machine Learning:

- Development of indexing structures for support vector machines to enable relevant instance search in high-dimensional datasets
- Speeding up SVM training in multi-category large dataset scenarios
- Speeding up approximate SVM classification of data-streams
- Improving concept identification and classification for personal image retrieval
- Using idealizing kernels to develop distance metrics incorporating user preferences for high-dimensional data
- Design of a real time web page classifier for text and image data

Grid Computing and Distributed Systems:

- Development of scheduling strategies for numerous large jobs in a grid environment under heavy load conditions using the Network Weather Service and Globus
- Development of scheduling strategies for executing compute-intensive jobs in a dynamically evolving simulated market of servers providing priced slots of CPU time for process execution
- Development of a distributed dictionary enforcing causal ordering
- Development of dynamic peer to peer system with query lookup modeling the CAN architecture

Computer Architecture:

- Design of a snoopy cache for a multiprocessor system
- Design of a superscalar instruction dispatch unit

Graduate Coursework

Computational Geometry, Data Mining, Matrix Analysis and Computation, Theory of Distributed Systems, Advanced Computer Architecture : Supercomputers and Distributed Systems, Computational Grids, Implementations of Modern Programming Languages

Computer Skills

Languages: C, C++, Perl, Verilog
Environments: Linux, Unix, Solaris, MS-Windows

Professional Activities

Reviewer:

Neural Information Processing Systems, NIPS (2006)
Transactions of Knowledge and Data Discovery, TKDE (2003, 2004, 2005 & 2006)
Transactions of Parallel and Distributed Systems, TPDS (2005)
Association for the Advancement of Artificial Intelligence, AAAI (2004)
Multimedia Systems, MMSJ (2006)
Image and Vision Computing, IMAVIS (2006)

Membership:

Society for Industrial and Applied Mathematics (SIAM) (2005)

Teaching Experience

Teaching Assistant:

- Foundations of Parallel Computing, Fall 2002, 2003 (Outstanding TA), 2004
- Foundations of Scientific Computing, Winter 2003
- Introduction to Programming in C, Spring 2003
- Advanced Computer Architecture, Winter 2004 (Outstanding TA)
- Numerical Simulation, Winter 2005
- Advanced Operating Systems, Fall 2005

Guest lecture on indexing techniques for high dimensional data for course on Internet Computing and Web Technologies, Fall 2004, Spring 2006

References

Prof. Edward Y. Chang
Dept. of Electrical and Computer Engg.
University of California,
Santa Barbara
(echang@ece.ucsb.edu)

Prof. Shiv Chandrasekaran
Dept. of Electrical and Computer Engg.
University of California,
Santa Barbara
(shiv@ece.ucsb.edu)

Prof. Subhash Suri
Dept. of Computer Science
University of California,
Santa Barbara
(suri@cs.ucsb.edu)

Prof. Ching-Yung Lin
IBM T. J. Watson Research Center
19 Skyline Drive
Hawthorne, NY 10532
(chingyung@us.ibm.com)

Dr. Lisa D. Amini
IBM TJ Watson Research Center
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Others available on request