Resume of Ganesh Ramakrishnan

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Professional Interests

The study and design of systems aimed at intelligent, comprehensive and lucid dissemination of information. Interested especially in the algorithmic, machine learning and system related issues of information retrieval systems.

Education

INDIAN INSTITUTE OF TECHNOLOGY *Bombay, India*
B.Tech, Computer Science and Engineering *1996-2000*
Scored an aggregate CPI of 8.9.

INDIAN INSTITUTE OF TECHNOLOGY *Bombay, India*
Ph.D, Computer Science and Engineering *2000-Present*
Pursuing Ph.D at IIT Bombay since July 2001. Work is centered around semantic disambiguation of words and relations for Information Retrieval. Currently focused on the issues of semantic disambiguation for Question Answering. Related areas of interest are : Machine Learning, Statistical Language modeling, Pattern Recognition, Statistical Learning Theory, Natural Language Processing.

Industrial Experience

Job *Veritas India Pvt. Ltd.*
April-July, 2000
Issues in the porting of vxfs file system from Solaris to linux. Left the job early to pursue Ph.D at IIT Bombay.

Summer Internship *BitSoft India Pvt Ltd*
April-July, 1999
Worked on developing a database system to handle a client company's financial transactions.

Some projects

Optimization Issues in the VIPER algorithm *Nov-Dec, 1999*
The VIPER algorithm (Proceedings of the 2000 ACM SIGMOD international conference on Management of data, Dallas, Texas, U.S) is a mining algorithm for vertical representation of market-databases. This project explored the optimization issues in VIPER. One important issue was memory-cognizant storage of a large symmetric association matrix. This matrix was earlier being stored in its entirety in the RAM.

Object Oriented Modeling of Music *Jan-Mar, 2000*

Design and implementation of an on-line library server for CSE dept, IIT Bombay
Sept.-Nov., 1998
This was done as part of a DBMS course project. The design used a back-end posgre-sql database and java servlets.

Design and Implementation of 80960 Intel microprocessor *June, 1999 - April, 2000*
This was my B.Tech project that involved the design and implementation of 80960 Intel microprocessor in VHDL for burning an FPGA for VSSC, Trivandrum

Estimating delay-jitter in Voice over IP *Feb-Mar, 2001*
The project involved estimating the delay-jitter parameter for the efficient replay of voice packets at the client end. The parameter was estimated using the Expectation-Maximization learning algorithm by Dempster.

Classification based on Dempster Schafer theory of Evidence *Aug-Nov, 2000*
In this project, we explored the use of 'belief functions' as proposed by Demspter and Schafer as an alternative to the normal probabilistic model used in classifiers like the Bayesian classifiers. The task to which we applied the method proposed was text classification.

Implementation of the Multiple Cause Mixture Model *Feb-Mar, 2001*
This project involved the implementation and testing of the MCMM model for text classification. We tested the classifier for text classification and later also for image segmentation. The model attempts to capture multi-labeling in data.

Face recognition though eigenface analysis
Aug-Nov, 2000
This was undertaken as an image processing project. The goal was to identify images of new faces against a repository of known faces. The new images were all images of faces existing in the repository but taken from different angles and during different time periods. The tool used was principal component analysis.

Monitoring highway traffic *Feb-Mar, 2001*
The target of this project was to build a system, which is supplied with live streaming video of vehicular motion on a highway. The task was to detect the speed of different vehicles and raise an alarm if any vehicle exceeded speed limits. There were two sub-tasks, one of identifying whether two images were of the same vehicle, which was solved using similarity metrics on the vehicular histograms. The second sub-task was to detect the speed of a vehicle, which was much more involved.

Publications

Is factoid Question Answering an acquired skill ?
Ganesh Ramakrishnan, Soumen Chakrabarti, Deepa Paranjpe, Pushpak Bhattacharyya
To appear in proceedings of the Thirteenth International World Wide Web Conference (WWW2004), New York City, 17-22 May 2004

Generic Text Summarization Using WordNet
Ganesh Ramakrishnan, Kedar Bellare, Anish Das Sarma, Atish Das Sarma, Navneet Loiwal, Vaibhav Mehta, Pushpak Bhattacharyya
To appear in proceedings of the Fourth International Conference on Language Resources and Evaluation (LREC 2004), Lisbon, Portugal, 26-28 May 2004

Soft Word Sense Disambiguation
Ganesh Ramakrishnan, Prithviraj, Deepa Paranjpe, Pushpak Bhattacharyya
In proceedings of International Conference on Global Wordnet (GWC 04), Brno, Czeck Republic, January, 2004

Question Answering using Bayesian Inferencing on Lexical Relations
Ganesh Ramakrishnan, Soumen Chakrabarti etc
Proceedings of the Workshop on Question Answering and Summarization at ACL, Sapporo, Japan, 2003

Text Representation with WordNet synsets: A soft sense disambiguation approach
Ganesh Ramakrishnan and Pushpak Bhattacharyya
Proceedings of 8^{th} International Conference on Applications of Natural Language to Information Systems, Burg, Germany, Published as LNI, Berlin, 2003

Text Representation with WordNet synsets: A soft sense disambiguation approach
Ganesh Ramakrishnan and Pushpak Bhattacharyya
ISI-NIS Journal, Special Issue on Natural Language Interface to Information Systems, 2003

Word Sense Disambiguation Using Semantic Sets based on WordNet
Ganesh Ramakrishnan and Pushpak Bhattacharyya
Proceedings of Workshop on Use of Semantics for Information Retrieval and Filtering: State of the Art and Future Research, LREC 2002, Las Palmas, Canary Islands, Spain

Using WordNet Based Semantic Sets for Word Sense Disambiguation and Keyword Extraction
Ganesh Ramakrishnan and Pushpak Bhattacharyya
Proceedings of International Conference on Knowledge Based Computer Systems (KBCS 2002) , Mumbai, India, December, 2002

Academic Competitions

Question Answering
Ganesh Ramakrishnan, Deepa Paranjpe, Soumen Chakrabarti
Text Retrieval Conference, 2003(The QA Track)

High Accuracy Document Retrieval
Ganesh Ramakrishnan, Deepa Paranjpe, Soumen Chakrabarti
Text Retrieval Conference, 2003(The Hard Track)

Retrieval of novel sentences
Ganesh Ramakrishnan, Deepa Paranjpe, Soumen Chakrabarti
Text Retrieval Conference, 2003(The Novelty Track)

Practical skills

Programming languages : C, C++, Java, perl, python, PHP, javascript, Haskell, Lisp, Prolog, Scheme etc
Work mostly on Unix(Linux) platform. Familiar with WINDOWS platform as well.

Courses Attended

Multivariate Analysis, Theory of Estimation, Introduction to Mathematical Statistics, Introduction to stochastic processes, Regression and Categorical Data Analysis, Linear and Non-linear Optimization, Information Theory and Coding, Pattern Recognition, Machine Learning, Computer Vision, Introduction to Neural Networks, Image Processing, Data Mining, Hypertext Retrieval and Mining, Operating Systems, Compiler construction, Theory of Computation, Algorithms and Complexity, Artificial Intelligence, Concepts in Programming Languages, Database Design and Implementation, Language and the mind.

Background/ Interests

Immensely interested in the science of spirituality, especially the sciences of God, yoga, origin, reincarnation, life-after-death, *etc.* Also have great interest in music, table-tennis, debating and elocution. Have participated and excelled in competitions involving aforementioned activities, at school and college level. Have been an active leader in organizing activities of the International Society for Krishna Consciousness, like travel to places of pilgrimage, dramas, festivals, kirtans, prasadam distribution, college programs on Bhagavad Gita, *etc.*