C.V.Krishnakumar Iyer

Contact Information
739 E El Camino Real Apt 112
Sunnyvale, CA-94087
*Email:*cvkkumar@cs.stanford.edu
Ph: 650-384-9476

Interests Data Mining and Analysis, Machine Learning, Information Retrieval

Education

Stanford University, *Sep '08 - Apr '10*

M.S. Computer Science GPA : 3.86 / 4.0

- Recipient of the prestigious *BPCL Scholarship* awarded by Bharat Petroleum Corporation Ltd. awarded to the elite few for Graduate Study abroad.
- *Relevant Coursework :* Machine Learning, Data Mining & E-Business (A+), Computational Advertising(A+), Information Retrieval & Web Search (A), Probabilistic Graphical Models(A), Data Mining(A), Transaction Processing and Distributed Databases, Network Analysis (A-), Biomedical Systems Design(A+), , Modern Applied Statistical Learning ,iPhone Application Programming

Birla Institute of Technology and Science, Pilani - Goa Campus *Aug 04 - Jun 08*

M Sc.(Tech.) Information Systems CGPA : 9.95/10.0

- Ranked No. 1 in Information Systems Department
- Recipient of the Silver Medal awarded by BITS to the second rank holder in the graduating class of 2008.
- *Relevant Coursework :* Artificial Intelligence, Data Structures & Algorithms, Software Engineering, Probability & Statistics, Discrete Structures for Computer Science, Data Mining.

Experience

Apple Inc., *Software Engineer* *Apr '10 to Mar '13*
Internet Services Group

- Worked on Spam and Fraud Detection problems using Machine Learning and large scale data mining techniques.

Center for Study of Language and Information, Stanford University
Graduate Research Assistant *Aug 08 to June 09*
Cognitive Assistant that Learns and Organizes (CALO)

- Member of a team involved in the addition of new features to CALO, a system that extracts decisions from multi-party meetings to enable the effective handling of feedbacks.
- Also involved in evaluation of the Service Manager
- Implementation used Java, Swing and libSVM
- *Mentor : Prof. Stanley Peters*

Internships

Apple Inc., *Summer Intern* *June 09 to Mar 10*
Internet Services Group

- Worked on automated sentiment analysis and opinion mining from Micro-blogs using a combination of sophisticated machine learning and data mining techniques.
- Member of a two-member team that was responsible for the entire project from its conception and design to implementation and production deployment.

Hewlett Packard Labs-India *Research Intern* *Jan 08 to June 08*
STAIR : System for Topical and Aggregated Information Retrieval

- Developed the architecture and the prototype of STAIR - an IR system that applied of a combination of Collaborative analysis and Focused Crawling techniques on the web documents to provide personalized, consolidated information relevant to the used as an aggregated PDF document.
- Implemented using Java, on top of Lucene. The semantics information were obtained from WordNet
- Published as a HP Labs Technical Report in 2009.
- *Mentor : Dr. Krishnan Ramanathan*

Bhabha Atomic Research Center, Trombay *Project Intern at DRHR* *May 06 to July 06*
Image Processing and Software Development for Simplifying Robot Trajectory Generation

- Built a system that extracts information of a continuous path from any arbitrary raw image using graph-theoretic methods and provides input to the indigenous *Sensor-cum-Manipulator* ,a Parallel planar kinematic robot.
- Implemented using C, Matlab(for image processing) and VB (as a wrapper GUI)
- *Mentors : Mr. Gaurav Bhutani and Dr. T.A. Dwarakanath*

Selected Projects

Role Discovery in Social Networks using DMR Based Topic Modeling

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- *Instructor: Prof. Daphne Koller, Stanford University*

Recommendation Systems based on Delicious and Twitter

- Implemented a People Recommendation System on Twitter (in Python) by a combination of several algorithms, that included collaborative filtering, network analysis and semantic consideration .
- Designed and implemented an URL Recommendation system by analysis of tags from *Delicious*
- *Instructor: Prof. Andreas Weigend, Stanford University*

URL Recommendation Based on Asymmetric Tag Similarity and Diffusion-Based Grouping

- Implemented an URL Recommendation system by analysis of tag similarity using data from ShareThis and Delicious using MapReduce and Partition based Joins on top of the Aster Cluster.
- *Instructors : Prof. Jeff Ullman and Prof. Anand Rajaraman , Stanford University*

Finding Answerers on Yahoo! Answers

- Designed an implemented a system for selection of most appropriate answerers in *Yahoo! Answers* based on textual, structural and auxiliary information. The result can be used to determine the routing for the new questions.
- *Instructor : Prof.Jure Leskovic, Stanford University*

Analysis of Text Based Classifiers

- Implemented and analyzed the performance of different Naïve Bayes classifiers on the 20-Newsgroups dataset, using Java and Lucene
- *Instructors : Prof.Chris Manning and Prof. Prabhakar Raghavan , Stanford University*

Comparison of Similarity Search Algorithms over Inverted Indexes

- Implemented and analyzed the performance of commonly used indexing similarity search algorithms - Term-at-a-Time and Document-at-a-Time. Also optimized the algorithms with efficient index compression.
- *Instructors : Prof.Andrei Broder and Prof. Vanja Josifovski, Stanford University*

System for Man-in-the-Middle Attack

- Implemented and analyzed a *Man In The Middle* attack on a SSL/TLS Connection as a part of the course project for Cryptography.
- *Instructors : Prof.Dan Boneh, Stanford University*

RefMed - A Physician Referral and Review Service

- Designed and developed a physician referral and review service that enables patients to review and rate the physicians and facilitates the physicians to recommend other doctors to their patients.
- *Instructor : Prof. Amar Das, Stanford University*

An Ontology-based Automatic Staging system for Cancer

- Developed a Automatic Staging System for Breast Cancer over the NCI Thesaurus using SWRL, OWL and Protégé
- *Instructor : Prof. Mark Musen, Stanford University*

Implementation Of a Search Engine for Personalized Information Retrieval by profiling of user data

- Designed and implemented a prototype search engine that incorporates an additional dimension of Personalization through User Profiling for Enhanced relevancy.
- *Mentors : Dr. Bharat Deshpande and Mr. Mangesh Bedekar , BITS Pilani Goa Campus*

Time Table Generator

- Implemented a system for automating the process of timetable generation for a University with its constraints, using a sub-optimal graph coloring approach for Constraint Satisfaction.
- Algorithms implemented in C. UI implemented in VC++

An Expert System for selection of Polymer Composite Systems

- Implemented a novel method for evaluation and ranking of constituent materials for composite products using *TOPSIS* , an MADM (Multiple Attribute Decision Making) approach that ensures an optimum solution for the characteristics desired.
- *Mentor : Dr. Durai Prabhakaran, BITS Pilani Goa Campus*

Publications

C.V.Krishnakumar and Dr.Krishnan Ramanathan, *STAIR : A System for Topical and Aggregated Information Retrieval* , Proceedings of the International Conference on Intelligent Human Computer Interaction (IHCI) 2009.

R.T. Durai Prabhakaran, B.J.C. Babu, V.P. Agrawal, C.V. Krishna Kumar, *A knowledge-based system for constituent material selection in polymer composite product design* - Proceedings of ISRS-2006, International Symposium for Research Scholars, IIT-Madras.

Skills

Languages: Java, Pig, Python, C, SQL
Frameworks: Hadoop (Cloudera Certified Hadoop Developer), HBase
Tools and Platforms: Mahout, Teradata, Weka, Eclipse,LaTeX , Octave, Weka
Operating Systems: Unix based Systems, Microsoft Windows.

Honors and Achievements

Consistent recipient of the *Merit Scholarship* awarded by BITS Pilani to the top 10 students across the batch.

Secured the First Prize at *OpenSoft* - the software construction contest conducted as a part of QUARK-07, the national level technological fest at BITS-Pilani, Goa Campus.

Recipient of the Merit Certificate,awarded to the top 0.1% of students, for proficiency in English in AISSCE from the CBSE, 2004.