Amit Dhurandhar

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Research Interests
Machine Learning, Data Mining, Pattern Recognition, Fuzzy Systems, Bioinformatics, Algorithms.

Education
P.h.d. in Computer Science, University of Florida, USA 2006 - 2009
M.S. in Computer Science, University of Florida, USA 2004-2005
B.E. in Computer Science, Pune University, India 2000-2004
Graduate School GPA: 3.76

Research and Teaching

Research Assistant 2006-present

- *Machine Learning and Data Mining:* a) Worked with Dr. Alin Dobra on semi-analytical methods for analyzing classification models and model selection measures in the non-asymptotic regime. This included theory and efficient computation using Monte Carlo and non-linear optimization techniques. b) Worked on issues related to collective classification in Statistical Relational Learning. These issues included comparing collective and independent classification and finding distribution free bounds in the relational setting.
- *Fuzzy Systems:* Worked with Dr. Paul Gader on analyzing a generic aggregation function namely, the Choquet Integral.

Teaching Assistant Fall 2007

- Course: Discrete Mathematics
  Responsibilities included lecturing, grading and holding office hours.

Centre for Development of Advanced Computing (C-DAC) 2003-2004

- Developed a proprietary character recognition algorithm for printed Devanagari script documents. Devanagari script has many more characters than the Roman script. Moreover, combination of these characters is also allowed to produce composite characters which makes the problem of efficient and accurate recognition challenging.

Publications

Journals

- **Amit Dhurandhar** and Alin Dobra. Semi-analytical Method for Analyzing Models and Model Selection Measures based on Moment Analysis. *ACM Transactions on Knowledge Discovery from Data (TKDD), Vol. 3, 2009.*
- **Amit Dhurandhar** and Alin Dobra. Probabilistic Characterization of Random Decision Trees. *Journal of Machine Learning Research (JMLR), Vol. 9, 2008.*
- **Amit Dhurandhar** and Alin Dobra. Insights into Cross-validation. submitted to *Data Mining and Knowledge Discovery (DMKD).*
- **Amit Dhurandhar** and Alin Dobra. Probabilistic Characterization of Nearest Neighbor Classifier. submitted to *Data Mining and Knowledge Discovery (DMKD).*
- **Amit Dhurandhar** and Alin Dobra. Test Set Bounds for Relational data that vary with Strength of Dependence. submitted to JMLR.
- **Amit Dhurandhar** and Alin Dobra. Distribution free bounds for Relational Classification. submitted to TKDD.

- **Amit Dhurandhar** and Alin Dobra. Independent vs Collective Classification in Statistical Relational Learning. submitted to TKDD.

Conferences/Workshops

- **Amit Dhurandhar** and Alin Dobra. Evaluating Evaluation Measures. *Evaluation Methods in Machine Learning workshop in International Conference on Machine Learning (ICML), 2009.*
- **Amit Dhurandhar** and Alin Dobra. Study of Classification Algorithms using Moment Analysis. *New Challenges in Theoretical Machine Learning workshop in Neural Information Processing Systems (NIPS), 2008.*
- **Amit Dhurandhar**, Kartik Shankar and Rakesh Jawale. Robust Pattern Recognition Scheme for Devanagari Script. *IEEE International Conference on Computational Intelligence and Security (CIS) 2005.*

Technical Reports

- **Amit Dhurandhar** and Paul Gader. Output Distribution of Choquet Integral.

Recent Talks

- Evaluating Evaluation Measures, *ICML, 2009.*
- Semi-analytical Method for Analyzing Models and Model Selection Measures, *Yahoo Research, 2008.*
- Study of Classification Algorithms using Moment Analysis, *NIPS, 2008.*

Professional Activities

- Have been a reviewer for Knowledge Discovery and Data Mining (KDD), Siam Conference of Data Mining (SDM) and Journal of Machine Learning Research (JMLR).

Achievements

- 2^{nd} prize in all India project competition, Concepts 2004 sponsored by Microsoft, Cybage, Calsoft and other top companies.
- 2^{nd} prize in all India Robotics competition, Techfest 2003 at IIT Bombay.
- Among the top 10 students out of a total of 12000+ B.E. students at the Pune University, 2001.

Skills

- Proficient in major programming languages and platforms.
- Strong mathematical skills (in particular statistical analysis).
- Fluent in English, Hindi and Marathi.

Activities and Leadership

- Led sessions in the Algorithm Theory Group Meetings in Fall 2008.
- Co-ordinator for the Database Center Weekly Seminars in Spring 2008.
- College team captain of the chess team in undergrad.
- College team member of the badminton team in undergrad.
- Love playing sports viz. Table Tennis, Squash, Swimming and outdoor activities.

References

Will be made available on request.