

Narayanan Unny Edakunni

Present Address -

Room 2.08,
Dept. of Computer Science,
University of Bristol,
UK

Work Experience

Research Assistant *University of Bristol*, Oct. 2008 - present

- Dept. of Computer Science

Software Associate *Strand Genomics*, 2002-2004

- Bangalore, India

Education

PhD *University of Edinburgh*, 2004 - 2009

- School of Informatics

Master of Technology *Indian Institute of Technology Bombay*, 2000 - 2002

- Computer Science and Engineering
- Cumulative Point Index(CPI) **8.95**, First class honours

Bachelor of Technology *Government Engineering College, Thrissur*, 1996 - 2000

- Computer Science and Engineering
- **80.8%**, First class honours

Publications

Book chapter

Pushpak Bhattacharyya and Narayanan Unny E, *Word Sense Disambiguation and Text Similarity Measurement Using WordNet*, Real World Semantic Web Applications, IOS Press, Amsterdam, 2002. Vipul Kashyap and Leon Shklar (ed), ISBN: 1 58603 306 9

Conferences

- Narayanan U Edakunni, Stefan Schaal, Sethu Vijayakumar, Kernel Carpentry for Online Regression using Randomly Varying Coefficient Model. International Joint Conference in AI (IJCAI) Hyderabad, India, January, 2007
- Pushpak Bhattacharyya and Narayanan Unny E, *Word Sense Disambiguation and Measuring Similarity of Text Using WordNet*, American Association for Artificial Intelligence (AAAI 2002) Workshop on Semantic Web and Language Resources, Edmonton, Canada, July, 2002.
- Narayanan Unny E and Pushpak Bhattacharyya, *Measuring Similarity of Text Using WordNet*, World Wide Web (WWW 2002) Workshop on real World RDF and Semantic Web Applications, Hawaii, USA, 7th May, 2002.
- Narayanan Unny E and Pushpak Bhattacharyya, *Word Sense Disambiguation Using Semantic Graphs*, International Conference on Global WordNet (Global Wordnet 2002), Mysore, India, January, 2002.

Invited talk/ Guest Lectures

- Dept. of Computer Science, Indian Institute of Technology Bombay, India, January 2007
- Dept. of Computer Science, University of Bristol, UK, March 2008
- Learning Classifier System Group, University of West England, UK, Jan 2009
- Artificial Intelligence Seminar, University of Birmingham, UK, Feb 2009
- Advanced Topics in Machine Learning and Data Mining, University of Bristol, March 2009
- Seminar series at Aston University, Birmingham, September 2009

Awards and achievements

- Received the IJCAI'07 travel grant.
- Received Overseas Research scholarship awarded by Universities UK funding PhD study.
- Awarded the ORS linked scholarship by the University of Edinburgh.
- Ranked 70th in Graduate Aptitude Test in Engineering-2000 among approximately 7000 examinees. It is a Indian national level examination to rank candidates for entry into post-graduate courses in engineering.
- Ranked 4th in Regional Mathematics Olympiad (Tamilnadu region, India), 1994.
- Recipient of National Talent Search Scholarship, 1994. National level scholarship awarded to students in India based on their performance in two levels of exam and an interview.

Research

Interests

Statistical machine learning, natural language processing, and robotics.

PhD Thesis

Probabilistic local linear regression using a randomly varying coefficient model : In this thesis, a Bayesian formulation of locally weighted learning (LWL) using the novel concept of a randomly varying coefficient model has been developed. Based on this, a mechanism has been proposed for multivariate non-linear regression using spatially localised linear models that learns completely *independent* of each other, uses only *local* information and adapts the local model complexity in a data driven fashion. The parameters of the model are learnt using *online* variational Bayesian EM updates that are time and space efficient. This thesis, for the first time, brings together the computational efficiency and the adaptability of 'non-competitive' locally weighted learning schemes and the modelling guarantees of the Bayesian formulation.

M.Tech Thesis

Measuring Text Similarity Using WordNet : The project was aimed at providing a different perspective to the problem of measuring text similarity. In the course of this project a new algorithm was developed to measure the similarity of text by including the semantics of the words in the text as opposed to the convention of treating a text as just a bag of words. This research was performed as a part of the Center of Intelligent Internet Research initiative of IIT Bombay.

M.Tech Seminar

Automatic Text Summarization : This seminar was aimed as an evaluative study of the different techniques of automatic text summarization giving more bias towards the algorithms that made use of the semantics of the text instead of ad hoc heuristics and text cues.

M.Tech Course Projects

Classification of semi-structured documents : This project was aimed at developing an algorithm for classification of semi-structured documents. For this, the dynamic pages generated at the IMDB site were taken. The html pages were then cleansed and converted into XMLs. Different classification algorithms were tried on it and the results were compared. The project was undertaken as a part of *Hypertext Retrieval and Mining* course.

Clustering of species based on gene sequence similarity : This project was undertaken as a part of the *Pattern Recognition* course. This involved development of an algorithm to cluster a set of organisms based on the similarity in the sequence of a gene that is common to all the organisms under consideration. This resulted in the generation of a phylogenetic tree.

Comparative study of decision list over other classification algorithms : The project involved the implementation of decision list and a comparative study of the decision list as a classification tool over some of the benchmark datasets. This was a part of the *Machine Learning* course.

Work Experience

Machine learning consultant for Alivox, 2007

Worked part-time as a consultant for Alivox ltd., Edinburgh. The responsibility involved evaluating and recommending different classification methodologies to improve a proprietary language recognition system.

Curation of machine learning links for IAPR, 2007

Was involved in the collection and curation of links related to machine learning. This effort was funded by International Association of Pattern Recognition and was supervised by Prof. Bob Fisher, University of Edinburgh.

Strand Genomics, 2002 - 2004

Associate Software engineer.

Avadis Had been responsible in the development of the annotation utility of the Microarray analysis tool - **Avadis**. This tool had been adjudged the **Product of the year** by BioSpectrum magazine.

Avadis Enterprise Designed and implemented the enterprise version of Avadis.

Spidering technology : Had been instrumental in developing a tool for spidering web sites, which is used in the annotation utility of Avadis. As a part of this effort, a new workflow language was developed based on XML.

Gene Ontology clustering : Had developed an algorithm for clustering genes based on the gene ontology terms associated with each of them.

PubMed Correlation : Had developed an algorithm for measuring the correlation between genes based on the hits that they produce on the PubMed site.

Proficient technologies :

XML : XML parsing, DOM, Schema validation, SOAP, XSLT

JAVA : Core java, Swing, JDBC, Servlets

Computer Languages

JAVA and C++

Personal profile and interests

Nationality : Indian

Language : English, Hindi, Tamil, Malayalam(Native)

Interests : Listening to music, playing flute, swimming, badminton

References

Can be provided