

Akanksha Shrivastava

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EDUCATION	UNIVERSITY OF OXFORD	MSc in Computer Science	Expected Aug 2015
	INDIAN INSTITUTE OF TECHNOLOGY (IIT), KHARAGPUR , India	Bachelors in Architecture	July 2013
EXPERIENCE	OPERA SOLUTIONS , India	Analytics Specialist Healthcare Sector	Jul 2013 – Jul 2014
	Was involved in 2 major projects Clients : large chains of hospitals (40+ units in the USA)		
	Key responsibility Develop state-of-the-art data-driven predictive & statistical models to solve business problems		
	Solution-based tasks - Python + MySQL + SAS		
	<ul style="list-style-type: none">Designed prediction models to generate lists of patients based on their propensity for 7 diseasesAchieved ~70% accuracy & RoI of \$5 millions, evident by the response from monthly campaigningDeveloped a many-to-many matching system to port disease codes from one encoding to anotherThe 90% accurate system is being used to adhere to the 2015 Clinical Modification ICD-10-CM¹Applicable to payment & risk adjustments across all hospitals in the order of \$16millionsInitiated & built a naive Bayes engine to flag top-k negative feedback from unsatisfied employeesUsed 90,000 tweets with smileys to train the model for positive versus negative commentsForecasted monthly employee attrition using regression, 60% accurate in the target size of 1000Analysed patient charges to flag missing charges and identify common sources of revenue leakageCreated a web crawler to collect bids in healthcare analytics; team gained 2 projects in 10 weeks		
	Consultancy-based tasks - Excel + SAS + MySQL		
	<ul style="list-style-type: none">Analyzed over 50GB of patient data and established business impact for 5 key client servicesPerformed monthly profiling of patient & ER data, exploratory analysis of Medicare spendingAutomated all relevant report generation for the client using Excel macros		
THESES	MASTER'S	Information Systems Group , Oxford	Ongoing
	Query answering in semantic web : Modeling User Preferences using Possibilitic Networks Prof. Thomas Lukasiewicz		
	<ul style="list-style-type: none">Developing a system to incorporate partially-ordered preferences of users in answering queriesFocus on uncertainty management & ranked results using possibility theory to encode preferences		
	BACHELOR'S	Dept. of Architecture , Kharagpur	2013
	Design of an Exhibition Centre in a tropical climate Prof. Abraham George		
	<ul style="list-style-type: none">Conducted an exploratory research on computational building architecture as a part of the thesisComputed a modular unit to optimise light admission and structural load using Voronoi diagrams		
PROJECTS	RESEARCH	Independent	2012
	Opinion Detection in English Sentences using Support Vector Machines		
	<ul style="list-style-type: none">Designed a bag-of-words system using SVMs, achieved ~80% accuracy & ~88% recallTested applicability & relevance of using data on a topic to classify sentences on unrelated topics1 of 5 students invited worldwide to present at Computability in Europe 2012, Cambridge		
	SUMMER RESEARCH	Ecole Polytechnique , Paris	2011
	Mathematics of Poker Prof Vincent Jost and Miki Hermann		
	<ul style="list-style-type: none">Derived optimal mixed strategies for 2-player n-card stud Poker using algorithmic game theoryDeveloped a new approach which decreased space complexity from exponential to polynomialAwarded scholarship by FX Conseil, a top organization supporting industry oriented research		

¹International Classification of Diseases, a standard tool for healthmanagement

SUMMER RESEARCH **Nanyang Technological University** , Singapore 2010
Alternate Authentication System - Mouse drawn passwords | Prof Ramakrishna Kakarala

- Devised an image-based data driven system supplementing text logins with graphical password
- Implemented speed & scale invariant image matching, using image moments, for the web

PUBLICATION A. Shrivastava, Opinion Detection in English Sentences using Support Vector Machines, Computability in Europe-IFCoLog Workshop Series, 1, 2012

MAJOR DEV. PROJECTS **WEB CRAWLER** **Python, MySQL, Shell** 2014

- Wrote a crawler for **electioncharts.com** to mirror live election updates from the official website
- Automated the program to parallely run every 5 minutes to update the SQL database

CROSS-PLATFORM APP **C++, Qt for Android | Tata Research** 2012

- Developed a portable codebase to aid image accessibility for the visually impaired
- Wrote a text-to-speech algorithm to read different descriptions of an image at various zoom levels

MFC ² APP **Visual C#** 2012

- Wrote a software to demonstrate structural calculations for the Design of Steel Structures course
- The software is being used as a part of the instruction material for the course

MSc Course Projects **POS TAGGING** **Python** 2015

- Implemented bigram & trigram Hidden Markov Model part-of-speech taggers with ~80% accuracy
- Experimented with Add-1 smoothing and Kneser-Ney method to tackle unseen words

SEARCH STRATEGIES **JAVA** 2015

- Wrote a comprehensive package to solve any search problem (given by states, actions & goals)
- Encapsulated a problem, a tree (implements BFS & DFS), search (tree, graph & A*) & a heuristic
- Implemented various combinations of frontiers and searches on the Touring & n-puzzle problems

SKILLS
 1000+ lines Familiar C++ • Python • MySQL • Java • \LaTeX
 JavaScript • CSS • PHP • C# • SAS

COURSES
 Graduate Knowledge Representation & Reasoning • Theory of Data & Knowledge Bases • Computational Linguistic
 Computational Learning Theory • Quantum Computer Science • Foundations of Computer Science
 Audited : Intelligent Systems

Undergraduate Machine Learning • Object Oriented System Design • Foundations of Computing
 Programming & Data Structures

EXTRA ACADEMIC top 5/1000 Special Mention in Dramatics, IIT KGP 2013
 top 1/350 Best Outgoing (Soc & Cultural), SN Hall, IIT KGP 2013
 National 3 gold and 2 silver winning plays 2008-12
 National, All India Rank **2nd** (Phase I), **8th** (Final) in Cyber Olympiad 2008

AFFILIATIONS Member Association CiE Lifetime
 Member compsoc, Oxford 2014
 Member invariants, Oxford 2014
 Captain Dramatics Team, SN Hall, IIT KGP 2013
 Governor Hindi Dramatics Society, IIT KGP 2010
 Web Secretary Student's Society of Architects, IIT KGP 2009

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²Microsoft Foundation Class