

EDUCATIONAL QUALIFICATIONS

Year	Degree	Institute	CPI/%
2010-till date	B.Tech-M.Tech(Dual), Computer Science and Engineering	IIT Kanpur	6.5 ¹ /10.0
2010	Class XII	Central Academy, Kota	86.6
2008	Class X	PVSS DAV Public School, Koderma	89.4

INTERNSHIP PROJECTS

Building mathematical models for financial analysis in C++

May - June 2013

Dolat Capital Market Pvt. Ltd, Mumbai

- Built a functional model to implement C-Support Vector Machines (SVM) using SMO-type (Sequential Minimization Optimization) decomposition method in C++.
- Worked on Auto-regressive Moving Average(ARMA) model in C++ for Financial time series analysis:
 - Applied two procedures namely Yule-Walker and Burg to the fitting of pure AR model.
 - Implemented the FPE scheme (Final Prediction error) to determine the optimized order and parameters for AR model.
 - Worked on Innovations algorithm to provide preliminary estimates of the ARMA parameters.

Creating online content for Engineering students

May - July 2012

Gyancentral.com, Mumbai

- Maintained engineering aspect of TestCentral and created an online database of around 1600 engineering entrance exams sample questions. It led to a **40** percent increment in no. of unique visitors and average duration of website visits **tripled**.
- Mentored IIT aspirants on website's forums.

KEY PROJECTS

DocPic Hunt

Yahoo! HackU 2013, IIT Kanpur

- Designed an application to navigate between/into text and image paradigm; given an image or document it could find relevant images and documents from a database.
- Computed **cosine similiarity** between documents represented as vectors of **TF-IDF** of words to give the most relevant documents.
- Generated tags of an image by classifying it in a **Multi-Class SVM** trained with **SIFT features** of more than hundred objects; used them in cosine similarity computation to search for related text/images.
- Awarded** as **Runner-up** for solving the challenging task of image to text relevance and vice-versa.

Movie Rating Prediction System

July 2013 - till now

Course project in CS771: Machine Learning Tools, Techniques and Application under the guidance of Prof. Harish Karnick

- Given an unknown user and a movie, the system predicts whether the user will watch the movie and the rating that would be given by him.
- Designed a model using **collaborative** and **content based filtering** and on dataset of 100,000 ratings from 943 users on 1682 movies for predicting whether a movie will be seen by an unknown user.
- Implemented **Multi-Class SVM** for building model that would guess the user rating into one of the five rating classes for an unknown user and movie. Problem could also be solved using **Linear Regression** where various features are assigned weights in the contribution of rating by a user.

Mobile Attendance App

July 2013 - till now

Course project in CS455: Software Engineering under the guidance of Prof. T. V. Prabhakar

- Building an android app to automate the process of taking attendances in schools, colleges, corporate meetings etc.
- Front end was built on **Android** platform using **Java** while the back-end was supported using **MySQL**

Extracting Complex Predicates from a parallel English-Hindi corpora

Aug Decl 2013

Course project in CS671: Natural Language Processinge under the guidance of Prof. Amitabha Mukerjee

- Given a parallel EnglishHindi parallel corpora, we have to detect all kinds of complex predicates in Hindi. Script was written in **Python**.
- Extracted over 10,000 CPs from a corpus of 0.1 million aligned sentences using the fact that a CP is a multiword expression with its meaning being distinct from the light verb (

¹Cumulative Performance Index after6 semesters

Connecting the Dots between News Articles

Jan - April 2013

Course project in CS365: Artificial Intelligence under the guidance of Prof. Amitabha Mukerjee

- Given a set of articles, a source article and a target article, we have to find a coherent chain of articles linking them together. Script was written in **Python**.
- Used unigram method, TF-IDF and cosine similarity to calculate similarities between articles from a dataset of 900 articles.

Social Survey, IITK

Jan - April 2013

Course project in CS315: Introduction to Database Management under the guidance of Prof. Harish Karnick

- Developed a web-based application for predicting the Happiness Quotient (HQ) of a user from IITK campus.
- The front-end part was created using **PHP**, **HTML** while the supporting back-end was set up using **MySQL**.

Perl Compiler

Jan - April 2013

Course Project in CS335: Compiler Design under the guidance of Prof. S K Aggarwal, CSE Dept, IIT Kanpur

- Developed a compiler in C for a subset of Perl Programming Language using **lex** and **yacc** that take a .pl files as input and generates MIPS assembly code.
- Incorporated support for scoping, functions, loop control statements, regular expression checking and recursion.

Chainless Bicycle Mechanism (Recieved Award of appreciation)

Jan - Apr 2012

Course Project in TA201: Introduction to Manufacturing Processes

- Developed an industrially applicable bicycle mechanism without involving any chain mechanism in it, thereby increasing it's efficiency.

SCHOLASTIC ACHIEVEMENTS

- Among top 0.6 percent of nearly 0.5 million applicants who wrote IIT-JEE 2010.
- Among top 0.5 percent of nearly 1 million applicants who appeared in AIEEE 2010.

RELEVANT COURSES

Database Management System	Natural language Processing ²
Artificial Intelligence	Machine Learning Techniques ²
Computer Networks ²	Introduction to Software Engineering ²

TECHNICAL SKILLS

Programming Languages	C, C++, Python, SQL
Tools and Techniques	HTML, PHP, L ^A T _E X, MATLAB
Operating Systems	Windows, Linux

POSITIONS OF RESPONSIBILITY

- **Student Mentor at Avanti Fellows**, an organisation aimed at bridging the educational divide between the students in India by helping capable, but underprivileged students to prepare for competitive exams like JEE, AIEEE, AIPMT etc.
- **Fellow Search Co-ordinator**, Avanti Fellows.
- **Election Officer**, Gymkhana Elections'11, annual elections to elect student body representatives at IIT Kanpur.
- **Junior Executive**, Show Management, Techkriti'12.
- **Captain**, Cricket Team, Josh'11, Intra College Sports Festival, IIT Kanpur.

EXTRA-CURRICULAR ACTIVITIES AND ACHIEVEMENTS

- Member of IIT Kanpur Cricket Team in **Udghosh'11**, Annual Inter College Sports Festival of IIT Kanpur.
- **1st prize** in **Gearloose**, Techkriti'11, Annual Inter College Technical and Entrepreneurial Festival of IIT Kanpur.
- **1st prize** in Impromptu Story Writing Competition at Voila'10, Annual Intra Hostel Cultural Festival of Hall-5, IIT Kanpur.
- **1st prize** in Abhivyakti at Voila'10, Annual Intra Hostel Cultural Festival of Hall-5, IIT Kanpur, had to prepare an impromptu skit and a poem on a topic which had to be presented for three minutes in various literary forms.
- Secured **1st rank** in a district level Quiz Competition named N.M.Memorial Quiz'02.
- Adventure sports : Cliff jumping, Rappelling. Rafting etc.

²to be completed by November, 2013