Agnivo Saha

c/o Mr. Goutam Saha
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Education

Degree/Examination	Institution	Year	Grade
B.Tech(upto 6^{th} semester)	Indian Institute Of Technology,Kharagpur	2012-2016	CGPA - 9.67/10 Rank - 4(Total),3(BTech)
AISSCE,CBSE Board(Class 12)	Bhavan's Gangabux Kanoria Vidyamandir	2012	95.4%(Best of 5),97%(PCM)
AISSE,CBSE Board(Class 10)	Bhavan's Gangabux Kanoria Vidyamandir	2010	CGPA - 10.0/10.0

Internships

Summer Internship at Microsoft India Development Center
May 2015-Jul 2015

- Created a Windows 10 universal Application under the CRM team of Microsoft.
- Created the design document for the application developed.
- Used Web Roles (Azure Cloud Service) for the backend service, Azure SQL Database and Azure Blob Storage for the storage of data.

A Survey on Deep Learning and some of its Applications in Computer Vision
Guides: Prof. Sushmita Mitra, Prof. B. Uma Shankar
June 2014-July 2014

- Implemented Deep Belief Network (using Restricted Boltzmann Machines) for classification of the MNIST dataset.
- Studied Deep Convolutional Neural Networks and their implementation on the ImageNet Dataset.

Classification and Clustering of the Iris-dataset
Guides: Prof. Sushmita Mitra (I.S.I Kolkata)
May 2014-June 2014

- Implemented the Multi-layer Perceptron(MLP) for Classifying the Iris data-set.
- Implemented the Self Organizing Maps/ Kohonen Network for Clustering the Iris data-set into 3 clusters.

Academic Projects

BTech Project : Deep Learning for NLP
Guide: Prof. Sudeshna Sarkar
Feb 2015-Present

- Calculated the Word Embedding Matrix (word vector representation) using a Neural Network with 1 hidden Layer for a small corpus.
- Studied Recursive Neural Networks and its application for sentiment analysis and paraphrase detection.

Information Retrieval Term Project : Implementing a Camera Search Engine
Guide: Prof. Sudeshna Sarkar
Mar 2015-Apr 2015

- The project was a web based search engine for Nikon Cameras.
- Crawled Flipkart's website for Nikon Cameras and extracted features such as price, zoom, ratings, reviews.
- Created an uniform indexing scheme comprising of important feature:value as bigrams and values, features as unigrams and each term was used as index for the cameras.
- Used nltk library for sentiment analysis on the reviews to predict ratings of Cameras which were missing in Flipkart's website.
- Calculated weights of the term-camera pair and used cosine-similarity for ranking of results.

Machine Learning Term Project : Recommendation of Music to Users based on previous ratings
Guide: Prof. Sourangshu Bhattacharya
Oct 2014-Nov 2014

- Used Yahoo dataset containing user-music ratings.
- Calculated the top 10 music for an user using Collaborative Filtering (using recsys library) which was used as a baseline for testing.
- Used PageRank algorithm to predict top 10 music for an user.
- Defined a Goodness Measure for calculating error between the predicted ranking and the baseline ranking and the sum of the errors for all the users accounted for the accuracy of our algorithm.

Database Management Term Project : An International Cricket software which supports various types of queries
Guide: Prof. Pallab Dasgupta and Prof. Animesh Mukherjee
Mar 2015-Apr 2015

- Created the ER diagram for the database design.
- Enlisted the schemas after Normalization.

- Crawled espncricinfo website and populated a database with the crawled data and the GUI was made using Java Swing.
- Supported Range queries, country level statistical queries, ground level statistical queries, tournament level statistical queries, etc.

Networks Term Project : A peer-to-peer file sharing mechanism using Chord Protocol
Guide: Prof. Niloy Ganguly and Prof. Sandip Chakraborty Mar 2015-Apr 2015

- The nodes had the same IP and different Ports and each node had a server running and a client running (who can request for downloading a file).
- The server maintains a finger table and a list of (file name, IP and port of node in which the file is located) pairs.
- Implemented search for a file's location (IP and port) using Chord Protocol (using hash of file name and sending through UDP packets).
- Supported download of file once the connection is established with the node having the file originally.

Compilers Term Project : Create a Compiler for Tiny C language (a subset of C-language)
Guide: Prof. Partha Pratim Das August 2014-Nov 2014

- Used flex for lexical analysis and Used yacc for writing the grammar rules and actions.
- Supported recursive functions.

Computer Organization and Architecture Term Project : Create a 32-bit RISC Processor deployed on a SPARTAN 3 FPGA Kit)
Guide: Prof. Ajit Pal August 2014-Nov 2014

- Created the design of the RISC processor and the operation codes for the various instructions supported.
- Used Verilog for implementing the processor.
- The instructions supported were all Arithmetic operations, branch statements and jump statements.

Academic Achievements and Scholarships

- Received Pre-Placement Offer from Microsoft India Development Center.
- Currently placed in the top 1% of the institute and did a **Department Change** from Mechanical Engineering with a CGPA of 9.62/10 at the end of the 1st year.
- 2^{nd} runner up in IBM Hackathon organized in my campus for making a Medical Android application.
- Recipient of the **JBNSTS Scholarship** after qualifying three rounds.
- Awarded eligibility for **INSPIRE Scholarship** for being in the top 1% of the CBSE Class 12 Examination.
- Secured an All India rank of **317** in **Kishore Vaigyanik Protsahan Yojana** Examination in the SX category organized by Department of Science and Technology India.
- Secured an **ALL INDIA RANK OF 1014** in the General Category amongst 4,50,000 candidates in the **IIT Joint Entrance Examination,2012**
- Secured an **ALL INDIA RANK OF 1404** amongst 11,00,000 candidates in the **All India Engineering Entrance Exam,2012**.
- Secured a rank of **18** in the West Bengal Joint Entrance Examination,2012.

Relevant Courses Taken

Programming and Data Structures*	Algorithms-I*	Discrete Structures
Introduction to Electronics*	Signals and Networks*	Switching Circuits and Logic Design*
Formal Languages and Automata Theory	Software Engineering*	Probability and Statistics
Computer Organization and Architechture*	Compilers*	Algorithms-II
Machine Learning	Matrix Algebra	Information Retrieval
Operating Systems*	Computer Networks*	Database Management Systems*
Speech and Natural Language Processing#	Theory of Computation#	
Artificial Intelligence#	Advanced Graph Theory#	Social Computing#

*Both Laboratory and Theory Components
#Currently Ongoing Courses

Skills

Programming Languages : C, C++, MySQL(Comfortable), Java, Python, C#(Novice)
Languages : English, Hindi, Bengali, German(basic).
Platforms : Windows , Linux.

Other Activities

- **National Service Scheme** : Won the Best Volunteer Award for my work in NSS. My NSS unit won the Best Unit Award in NSS Camp.
- Hobbies include football and Table Tennis.