Ishita Ankit

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Education

University of Massachusetts, Amherst, USA — Sept'17–*
Master of Science in Computer Science

Indian Institute of Technology, Kanpur, India — July'13–June'17
Bachelor of Science
Major: Mathematics & Scientific Computing
Minor: Computer Science- Artificial Intelligence — CPI: 8.1/10.0

Projects

Working with Databases, Prof.Medha Atre, CSE, IITK — Jan'17–Apr'17

- Built a web-application with an interactive GUI using Django(python) to cater the placement cell of the campus for smooth entry and verification of applicants as well as companies along with scheduling interviews.
- Designed an effective database architecture to address storage and querying issues and also experimented the use of sorted files and dynamic trees to make insertions and deletions hassle-free.

Descriptive Image Captioning, Prof.V.Namboodiri(CSE), Prof.B.V.R.Kumar(MTH), IITK,July-Dec'16

- Replicated the torch implementation results of Dense Captioning model to obtain region-specific captions.
- Refined the captions by putting filter on the overlap area and caption similarity to reduce redundancy.
- Used Stanford Parser to extract root words for clustering captions on topic basis and fed them into an encoder-decoder model trained to generate sentences from phrases obtaining successful results in producing paragraphs for images in Visual Genome Dataset.

Video Captioning, Prof.Gaurav Sharma, CSE, IITK — July'16–Dec'16

- Implemented the State-of-the-art model of Sequence to Sequence-Video to Text which exploits the temporal information of videos by feeding the CNN features of every frame of the video into a two-layered LSTM.
- Incorporated audio features to improve the confidence in activity prediction which refined captions.
- Combined the Deep Compositional Captioning model to use a language model trained on DBpedia producing better captions and reduced dependency on annotated dataset.

Handwriting Recognition using DTW algorithm, Prof.Amit Mitra, MTH, IITK — July'16–Dec'16

- Pre-processed data obtained from UCI ML Repository containing series of co-ordinates at each timestamp.
- Successfully applied Dynamic Time Warping(DTW) algorithm as well as its variant to classify alphabets written by around 100 volunteers with an accuracy of 70%.

Pedestrian and Vehicle Classification, Prof.Harish Karnick, CSE, IITK — Jan'16–Apr'16

- Cleaned the data obtained from surveillance camera videos of the campus and carried out background subtraction for object detection which were then tracked using box overlap in consecutive frames.
- Employed grey-scale, HOG, hierarchial HOG and SIFT features for clustering as well as classification.
- Experimented with SVM, Random Forest, Adaboost, Convolutional neural nets for classification of vehicles and pedestrians obtaining the highest accuracy of 95.37%.

Gaussian Processes for Regression, Prof.Piyush Rai, CSE, IITK — Jan'16–Apr'16

- Studied Gaussian Processes which involves inferring a distribution rather than giving a point estimate.
- Assumed a Gaussian prior with a zero mean and squared exponential covariance over the predicting function and used Bayes Theorem to obtain a posterior which is also a Gaussian Distribution for forecasting.
- Tried various covariance functions securing an A in the project to predict forest fires in GPML, MATLAB.

Campus News Website, Programming Club, IITK — May'14–June'14

- Designed a website as a centralized platform for updates scraped from campus mails, club and senate sites.
- Built an interactive user interface in AngularJS which was used by campus students to log-in and choose topics of interest for grouping of information enabling regularisation of important news and updates.

Internships

InMobi, Bangalore, India — May'16–July'16

Predicting User Relevant Advertisement, Data Scientist Intern

- Analysed data containing app usage history to obtain user specific pattern in the app preferences.
- Tried k-means, agglomerative Mean-Shift and Markov models to group users with similar features.
- Trained SVM, decision trees & Random Forest for predicting ads with maximum click through rates to provide user targeted advertisements.

Demand Pool Analyzer (DPA), Software Intern

- Build an Analytical Engine to get insight into Supply-Demand Matching for real time debugging.
- Tomcat based web application in Java backed by Elastic Search for efficient querying,aggregating data.
- Real time feedback using Kafka which provided data for analysis from serving systems having necessary details.

Tarnea Technology Solutions, Bangalore, India — May'15–July'15

Sales Forecasting using Time Series Analysis, Data Analyst Intern

- Developed a model to predict weekly and quarterly sales of medicines using past 2 years data.
- De-trended & deseasonalized the data to obtain stationary sequences for applying time-series models.
- Used Exponential Smoothing & ARIMA[Auto Regressive Integrated Moving Average] methods to forecast the sales of 12 medicines for 30 retail stores.

Scholastic Achievements

- Ranked in National Top 0.2% (amongst 1,400,000 candidates) in JEE Mains 2013 and 1185 (amongst 150,000 candidates) in IIT-JEE Advanced 2013.
- Recipient of the prestigious INSPIRE(Innovation in Science Pursuit for Inspired Research) fellowship by the Government of India to promote research based education[2013-2017].
- Elected as the Head girl and also bagged the Outstanding Sacred Heartian Award(Highest Honor in School).

Relevant Courses

Probability, Statistics and Stochastic Processes
Introduction & Recent advances in Computer Vision
Topics in Computer Vision(Neural Nets)
Data Structures & Algorithms
Machine Learning Tools and Techniques
Principles of Database Systems

Technical Expertise

Programming Languages C,C++, Java, Python, MATLAB, HTML5, CSS, R
Packages Scikit learn, Pandas, NLTK, GPML, OpenCV

Leadership and Social Initiatives

Head Events, Entrepreneurship cell, IITK — May'15–May'16

- Planned and executed eSummit'15 and TEDxIITKanpur'16 as a core team member of E- cell.
- Envisioned and introduced the flagship competition of eSummit, Upstart, catering to seed stage start-ups.

Enactus, IITK — May'15–May'16

- Created sustainable livelihood for villagers through initiatives: Agaaz(Training village ladies to make paper product) and PakVan (Employing the jobless mess workers by training them to cook delicacies).

Head Girl, Sacred Heart School, Ranchi — Mar'08–Mar'09

- Represented the school in inter-ICSE meets and was a member of the school senate.
- Actively involved in Help-age India campaign & school's initiative to work in cheshire homes housing special children.

Co-Curricular Activities

- Won the "Best Incoming Sportsperson" award and also represented the institute at InterIIT Sports Meet Bombay'14 & Guwahati '13.
- Completed 3 years in Tabla from Prachin Kala Kendra & received Second prize in Instrumental Competition.
- Written articles for Blogs: Entrepreneurship-cell(An Ounce of Madness),Techkriti, Blog For a Cause, NERD newsletter.