Gyanesh Gupta

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Bengaluru, India

EDUCATION

Indian Institute of Technology, Kanpur — Kanpur, India
Bachelor of Technology in Computer Science and Engineering; GPA: 7.5/10 — *2014-2018*

D A V Model School — Durgapur, India
Central Board of Secondary Education; 96.5 % — *2014*

St.Xavier's School — Durgapur, India
Indian Certificate for Secondary Education; 92.8 % — *2012*

SKILLS

- **Languages**: Python, Java, C/C++, R, MATLAB
- **AI Libraries**: Scikit-Learn, Pytorch, Tensorflow/Keras, NLTK
- **Other Frameworks**: Hadoop/Spark APIs, Git, Django
- **Platforms**: Windows, Ubuntu, MacOS

PROFESSIONAL EXPERIENCE

Oracle IDC — Bengaluru, India
Member of Technical Staff — *July 2018 - Present*

- **OBX-ML**: Developed algorithms such as K-Means, Sampling and SVM using Java Spark API as a part of Oracle Advanced Analytics Product
- **OBX-NNET**: Enhanced the current Neural Network in the product by in- cluding advanced optimizers, regularization methods and various learning rate changing methods
- **ORCH/ORE**: Involved with constant maintenance of the Oracle R Connector for Hadoop, and Oracle R Enterprise, including periodic bug fixing

Samsung R&D Institute — Noida, India
Research Intern — *May 2017 - Jul 2017*

- Detected the core points of fingerprint images using Gradient Orientation Map at an accuracy of upto 95 %
- Implemented various fingerprint matching algorithms available in literature, using different datasets
- Applied Biohashing to fingerprint features to improve equal error rate from 8.6 % to 1.5 %
- Demonstrated on real life data of 70 employees and proved that Biohashing can be successfully deployed

Tomsk Polytechnic University — Tomsk, Russia
Winter Exchange — *Dec 2016*

- Studied about Genetic Algorithms, Swarm Optimization and other heuristic based algorithms
- Studied about Neural Networks, and played with libraries such as Tensorflow and Pytorch
- Classified Russian Alphabets by using improved initialization using Genetic Methods for the weights to be used in a CNN architecture

MAJOR PROJECTS

Latent Space on VAE
Course Project under Prof. Purushottam Kar — *July 2017 - Nov 2017*

- : Designed a novel VAE architecture to address the problem of mode collapse and latent space saturation.
- : Implemented the above architecture on a dataset of paintings by Monet and his associates to study artistic style
- : Mapped and correlated the paintings to the respective artists with the help of the latent space generated

Memory Intensive Graphs
UG Project under Prof. Medha Atre — *Jan 2017 - April 2017*

- Developed algorithms to optimize graph reachability queries and pattern queries in large graphs
- Studied how graph pattern queries can be solved using Reachability Matrix (memory intensive) and using Bi-directional BFS (time intensive)
- Estimated the transitive-closure of large graphs using a Monte-Carlo non-deterministic approach created a sparse reachability matrix for the graph to handle large queries and Bi-directional BFS for the rest
- Compared the performance between the above hybrid method with the two basic methods over graphs of order 10,000 vertices

Soccer Win Loss Prediction
Ongoing self project — *Dec 2018 - Present*

- **Team2vec**: Created a word embedding matrix for each team based on the the different stats of the matches played by them
- Trained the arcitecture using English Premier League Data of last 10 years
- Explored the vectors by using classifiers such as SVM, Logistic Regression

Human Centered Computing

Mini projects, under Prof. Nisheet Srivastava *Jan 2017 - April 2017*

- **Personality Traits Prediction**: Estimated Big-Five Personality Traits via regression using various phone call data features and built a simple to collect those features
- **Internet Usage and BMI**: Drew correlation between BMI of an individual and his internet history using basic Text-Mining and Document Classification (LSA)
- **Train Recommender System**: Implemented a train Recommender System, which uses simple curve-fitting of past running data over Weibull distribution and significance tests

Text Mining in Hindi

Short Project, under Prof. Arnab Bhattacharya *July 2017 - November 2017*

- Implemented Bag of Words Models in Hindi Corpus to and made a document classifier
- Studied WordSense Disambiguation and using WordNet and Microsoft Translator, created a corresponding word sense for Hindi Vocabulary
- Compared results of BoW models on similar news articles in English and Hindi

Other Projects

- **Quora Insincere Classsification Kaggle**: Used bag-of-words, pre-trained Embedding weighted with tf idf, and LSTM to classify between sincere and insincere questions on Quora
- **NLP Reading**: Read about recent papers on NLP, including Transformer, BiDAF, BERT
- **Voting System**: Designed a new voting system and simulated the model based on previous election data
- **Chat Application**: Created a toy chat application using TCP/IPv4 protocols and used AES encryption between messages
- **Sylvester-Gallai Theorem and Crossing Lemma**: Studied Sylvester Gallai Theorem and various bounds on the Crossing Number
- **Style Transfer**: Implmented Artistic Style Transfer using VAE-GAN, added simple adjustments to run on custom dataset
- **Complier for Lua**: Basic Compiler for Lua Language using Lex and Yacc, including arrays,function and structures
- **NachOS Operating System**: Extended NachOS to include system calls, job scheduling, demand paging and page replacement algorithms
- **Gyrostabilized Aircraft**: Fabritcated A thermocol aircraft and wrote PID algorithms on Arduino Uno to stabilize the aircraft
- **Static Site**: Created a static site using Hugo used for blogging articles

Achievements

- Scored 329/340 in GRE General Test (170/170 in Quants Section)
- Scored 112/120 in TOEFL iBT (above 25 in all sections)
- Student Guide : Mentored freshers to get them acclimatized to university
- Sports Secretary : Responsible for Sports Equipment, Activities and General Hall Activities
- Secured an All India Rank (AIR) 143 in JEE Advanced 2014 amongst 150,000 shortlisted candidates
- Topped the state in West Bengal JEE 2014 among 170,000 students
- Selected for Special Class Railway Apprentice after clearing the entrance test among 1,50,000 candidates, 2014
- Selected to attend the Orientation cum Selection Camp after clearing the Indian National Chemistry Olympiad, 2014
- Awarded KVPY Scholarship by DST foundation

Relevant Courses

- **Machine Learning**: Introduction to Machine Learning, Visual Recognition, Human Centered Computing
- **Systems**: Computer Networks*, Operating Systems, Computer Organization, Introduction to Databases
- **Algorithms**: Data Structures and Algorithms, Advanced Algorithms
- **Others**: Psychology of Language, Applied Game Theory, Multi-Agent Systems, Learning Memory Cognition