GUPTA, Ayush

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Education

HKUST- BSc (Hons.) in Mathematics (Computer Science Track) September 2016 - September 2019

- Completed the 4 years Honors program in 3 years (one-year early graduation) by consistently taking extra credits than normal.
- Graduated with Division 1, Second Class Honors. Graduation Grade Average (GGA) – (approx.) 3.27 / 4.3.
- Relevant courses- 'Data Visualization', 'Machine Learning for Natural Language Processing', 'Matrix Computation', 'Applied Statistics', 'Probability' , 'Introduction to Natural Language Processing', 'Design and Analysis of Algorithms'.

Central Board of Secondary Education, India April 2014 - March 2016

- 95% in Mathematics, Physics and Chemistry. Overall 91.6% (including English, Physical & Health Education).

Projects

Data Analytics & Visualization – Analysis of Worldwide Spotify Song Rankings and Characteristics February 2019 - May 2019

- Analyzed and Visualized songs data for various features such as Song popularity, Song Ranking Velocity, Similarities of Popular Songs and Correlation between Countries.
- Extracted useful information from those visualizations that can have great possible impacts for Potential Stakeholders such as Labels, Artists and Listeners in terms of finding good markets to launch and improving marketing strategies, identifying countries with highest growth potential based on audio characteristics of a song and finding songs that match the taste of listeners.

Capstone Research project – 'A Computational Comparison of Sorting Algorithms' September 2018 - December 2018

- Compared sorting algorithms based on their performance on real randomly generated datasets of size up to 10 million entries.
- Compared the results with that of previous researchers. Found that computational methods generate greater insights than theoretical methods. Potential impact of improving the method of comparison from theoretical to computational.

Machine Learning Language Model – Predicting last token given a sequence of words September 2018 - December 2018

- Implemented algorithm using lstm layers for neural network model, used python programming language.
- Split the training dataset of 100K entries into 80K for training set and 20K for validation set. Trained the model on training set and then tuned the hyper-parameters on validation set.
- The hyper-parameters varied include epoch, batch size, embedding dimensions, hidden size, drop rate, recurrent drop rate, number of lstm layers.

Awards & Achievements

Dean's list award, HKUST May 2018

- For outstanding academic performance, Term grade average above 3.70, in Spring term 2018

University Scholarship, HKUST September 2016 - September 2017

- University Scholarship for academic year 2016-17

International Mathematical Olympiad - Regional Awardee January 2014 | January 2015

- Award for excellent performance in Regional level of International Mathematical Olympiad
- Amongst 35 students from the state Chhattisgarh, India qualifying for Indian National Mathematical Olympiad
- Advanced problem solving in – Combinatorics, Number Theory, Algebra and Geometry

Leadership and Involvement

Volunteer, HKUST Connect Community Service September 2016 - Present

- Actively participated in a variety of volunteering activities for helping blood donation, ethnic minorities, elderly people

Volunteer, SCI/NUCLEUS Community Service September 2016 - Present

- Actively participated in 'Lunch gathering with ethnic minorities' thrice

Skills

Languages: Hindi (Native), English (Fluent), Chinese (Basic)

Software applications: D3, JavaScript, Python, C++, Java, Microsoft Office, MATLAB, HTML, CSS

Strengths: Responsible, Learner, Detail minded, Hardworking, Adaptable, Problem Solving, Research