Rishabh Gupta

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EDUCATION

Indian Institute of Science, Bangalore **Bengaluru, KA**
M.Tech (CSA) under Prof. Chiranjib Bhattacharyya *2018 - present*
CGPA: 8.9/10

Guru Ghasidas Vishwavidyalaya (Central University) **Bilaspur, CG**
B.Tech in Computer Science and Engineering *2014 - 2018*
CGPA: 8.64/10

EXPERIENCE

LinkedIn **Bangalore**
Summer Intern *May 2019 - July 2019*
- Finding overlapping communities in Linkedin's connection network and identifying the member features which are important for connection and community formation.
- Part of my MTech thesis, worked in the AI team.

IIT Bombay **Mumbai**
Summer Intern *May 2017 - July 2017*
- Worked in the project titled Gamification Framework (ekShikshaProject).
- Created a generalized framework which allows teachers to create game-based curriculum, which students can play and eventually learn at their own pace. This requires gamification of learning, by adding game features to the e-learning environment. It also required us to create web games to incorporate into it.
- Worked under the guidance of Prof D.B. Phatak
- Worked on Javascript, JSP, Three.js, Game Development

PROJECTS

Overlapping Community Detection
MTech Project *May 2019 - Present*
- Finding overlapping communities in a network using stochastic variational inference on a generative model.
- Uses assortative-Mixed membership stochastic blockmodel.

Badminton Stroke Classification
Data Analytics Course Project *Nov 2019 - Dec 2019*
- Detecting the class of badminton stroke from sensors' data.
- Time varying accelerometer and gyroscope sensor data from a device attached to player's wrist (similar to a smart watch).
- All tasks carried out ourselves, from collecting data and preprocessing it to final model evaluation.
- Used classical ML techniques like random forests, gradient boosting, SVM, etc. and deep learning models for time-series data like LSTM and 1D CNN. (Using sklearn and tensorflow).

Graph Representation Learning
Machine Learning Course Project *March 2019 - April 2019*
- Explored different methods for embedding graph nodes like deepwalk, node2vec, etc.
- Performed various experiments like link prediction and label classification on real world datasets using those node embeddings.

Topological Data Analysis on Dynamic graphs
Computational Geometry and Topology Course Project *Feb 2019 - April 2019*

- Applied TDA on time-varying graphs. Extracting persistence diagrams of each snapshot and comparing their pairwise Bottleneck/Wasserstein distances.
- Obtained a timeline plotting first dimension of classical MDS against time for analysis. This gave us the insights of the variations in the data over time.
- Used TDA libraries like Gudhi, Dionysus 2, TDA package in R.

1D Landscape Profile
Computer Graphics and Visualization Course Project *Sept 2019 - Oct 2019*

- Created a tool to construct landscape profile for any given augmented join tree extracted from a scalar field, clustering data, 3D model or any other domain.
- Used Python and D3.js.
- Landscape profile gives us a visual representation of the change in field values for easy analysis, even for higher dimensional data.

Feature Selection Using Genetic Algorithm
BTech Final Year Project *Jan 2018 - May 2018*

- Reduced the number of features in a dataset using genetic algorithm as the optimization technique. Selected the suitable features while keeping the accuracy of the classifier as high as possible.

Game Development
Mini Games

- Worked in game development during bachelors. Developed indie games in variety of platforms - Unity 3D, Android, Blender, three.js.
- Games like Pacman, Tetris, Asteroids, Simple racing, etc.
- Worked in Javascript, Java, C#, C++

COURSES

- **Ongoing:** Deep Learning.
- **Completed:** Practical Data Science, Machine Learning, Computational Methods of Optimization, Data Analytics, Stochastic Models and Applications, Bioinformatics, Computational Geometry and Topology, Graphics and Visualization, Linear Algebra and Probability, Design and Analysis of Algorithms, Theory and Practice of System Security.

POSITIONS HELD

- Member of Sponsorship Team for CSA, IISc Open Day 2020.
- Placement coordinator, CSA IISc 2018-20 batch.
- Technical Adviser for coding events in Equilibrio 2017 (GGU TechFest), organised 4 events, managing a team of 20 members.

ACHIEVEMENTS

- Secured All India Rank - 2 among 107,893 candidates in GATE 2018 in Computer Science with a perfect score of 1000.
- Selected for ACM-ICPC Asia onsite regionals (Chennai) (2017)
- Secured 4th rank in Kurukshetra (RoboWar) event in OJASS'16-NIT Jamshedpur
- Secured 2nd rank in Vic-Toy-Rie (Line Follower) event in OJASS'16 - NIT Jamshedpur
- Secured 2nd rank in Line Follower event in Ignus'15 - IIT Jodhpur