Dhiraj Kumar

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EDUCATION

- **Indian Institute of Technology Kharagpur** — Kharagpur, India
  Bachelor of Technology in Industrial and Systems Engineering — 2016 – 2020 (Expected)
  GPA: 9.37/10.0 Department Rank 1

  Relevant Coursework: Probability and Statistics, Design and Analysis of Algorithm, Information Systems, Linear Algebra, Operations Research, Genetic Algorithms, Programming and Data Structures, Regression and Time Series etc.

- **Senior High School** — Jamshedpur, India
  Central Board of Secondary Education (CBSE) ***94.6%*** — *2014 – 2016*

PUBLICATIONS

- **CL Scholar: The ACL Anthology Knowledge Graph Miner**: Mayank Singh, **Dhiraj Barnwal**, Pradeep Dogga, Sohan Patro, Ritam Dutt, Rajarshi Haldar, Pawan Goyal, Animesh Mukherjee

  North American Chapter of the Association for Computational Linguistics 2018

WORK EXPERIENCE

- **Google Summer of Code - Mozilla**
  Software Engineering Intern, Mentor - Brendan Colloran — *April 2018 - Present*
  - Worked on Iodide - an open source web browser based portable notebook for scientific computation. Iodide notebooks are designed for scientists so that they can work flexibly and share their work without any hassle.
  - Created a server component using Django to add various features such as saving and forking of notebooks. Implemented version control and revisioning system for the notebooks.
  - Implemented various features using React, Redux, made the notebook code more robust and performant, helped to shape the user experience and wrote tests for different components.

- **Complex Networks Research Group** — CS Department, IIT Kharagpur
  Research Assistant, Mentors - Prof. Animesh Mukherjee and Prof. Pawan Goyal — *Aug 2017 - Feb 2018*
  - Worked on ACL Anthology Knowledge Graph, a project to better understand the research progress in Computational Linguistics community.
  - Developed CLScholar, an advance search portal for all the authors, conferences and research papers published within the computational linguistics community.
  - Developed the frontend on React, API on NodeJS and database on MongoDB. Wrote over 1000 MongoDB queries to support over 1200 Natural Language Queries.

- **Templates Yard**
  Co-Owner, Template Designer and Developer — *Oct 2015 - April 2017*
  - Templates Yard is a multi-category repository for premium themes and templates for the Blogger platform (owned by Google) and has attracted more than 10 million hits.
  - Developed and designed numerous templates for the platform which were used by more than 20,000 websites all over the world.

PROJECTS

- **Statistical modeling for Multiple Vehicle Routing**: Constructed a multi objective mathematical model for Multiple vehicle routing with overlapping paths. Applied the model for university's Bus routing and scheduling to reduce overcrowding and operational costs. Solved the problem using NSGA II algorithm.
  Term Project for Genetic Algorithm

- **Khet**: Developed mobile application for semi-literate farmers of India to remove middleman between the the farmers and consumers. The technology stack used for this project were React Native, Google Cloud Vision, NodeJS.
  Term Project for Work System Design

- **Medicine Demand Forecast**: Forecasted future demand of medicines by applying methods such as ARIMA, Holts-Winter on Time Series Data. Made relevant visualizations using Matplotlib and D3js for exploratory analysis.

- **Retail Chain Data Analysis**: Wrote a detailed analysis report for a retail chain. Made clusters using Hierarchical Clustering for different cities. Regressed through the given data to find parameters which affect total sales.

SKILLS

Languages: Python, Javascript, C, C++, SQL, ES6, CSS
Libraries/Frameworks: React, NodeJS, Django, Scikit, Tensorflow, D3, Keras, Pandas, Redux, Flask
Tools: Git, CPLEX, MATLAB, Tableau (Basics)
Research Interests: Applied Machine Learning, Statistical Modeling, Optimization and Data Analytics

RESPONSIBILITIES

- **Kharagpur Open Source Society**
  Executive Head   *Feb 2018 - Present*
  - Taught and Lead the Introduction to JavaScript workshop at Open Source Summit 2017 with participants from all over India.
  - Organized and managed Kharagpur Winter of Code programme (KWoC 2017). The programme had more than 2500 registrations from over 50 colleges.
  - Organized and tutored Git workshop, Python workshop and Ubuntu install fest to help bring the student community closer to the field of Open Source.
  - Helped in promoting Open Source culture at IIT Kharagpur and various colleges across India.

- **Kharagpur Winter of Code 2017**
  Mentor   *Dec 2017*
  - Mentored a couple of students in KWoC (organized by Kharagpur Open Source Society) which is a 5-week long GSoC-styled programme for students who are new to open source software development

ACTIVITIES AND ACHIEVEMENTS

- As **Vice Captain** of RK Hall **Data Analytics Team**, mentored freshers and sophomores in the fields of Data Analytics and Data Science. Taught students various Data preprocessing techniques and algorithms

- Among the **Top 0.4** percentile in the Indian Institute of Technology Joint Entrance Exam Advanced-2016 (IIT JEE).