# MAINAK CHAIN

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Personal-Webpage | LinkedIn | GitHub

## EDUCATION

| YEAR | DEGREE | INSTITUTION | PERFORMANCE |
|---|---|---|---|
| **2015 – 2020** | Metallurgical & Materials Engineering (Dual Degree)<br>Minor in Mathematics and Computing (M.Sc.) | Indian Institute of Technology, Kharagpur | 8.16 / 10<br>8.11 / 10 |
| **2015** | AISSCE | Delhi Public School, Bokaro | 92.8 / 100 |
| **2013** | ICSE | De Nobili School, Sindri | 95.6 / 100 |

## PUBLICATIONS/CONFERENCES

**Neural factorization for Offer Recommendation using Knowledge Graph Embeddings**
- Accepted as one of the 24 workshop papers to be presented at **SIGIR eCom 2019**, Paris, France

**Decision Support System for Prediction of Occupational Accident: A Case study from a Steel Plant**
- Awarded the **best paper** in International Conference on Emerging Technologies in Data Mining and Information Security **(IEMIS), 2018**
- Accepted for publication as a book chapter in Advances in Intelligent Systems and Computing series **(AISC), Springer**

**Data-driven Decision Support System for Prediction of Occupational Accidents**
- Abstract accepted for presentation in Institute of Industrial and Systems Engineers Annual Conference **(IISE), 2018**, Orlando, Florida, USA

## INTERNSHIPS

**Research Engineer Intern** | Ola (ANI Technologies Pvt. Ltd), Bangalore — May 2019 – Jul 2019
- Built a new **drop suggestion model** at scale with daily bookings, to better the customer experience and boost user conversion rate on the platform
- Improved on current **drop suggestion model** by reducing error by **18.67%** by using a tree based classifier and with better feature engineering
- Worked towards enabling **one-touch booking system** to facilitate hassle-free bookings to customers by intelligent recommendation
- Granted a **pre-placement offer** among 15 other interns from the company for showcasing excellence in performance and project results

**Data Science Intern** | Innoplexus Consulting Services Pvt Ltd, Pune — May 2018 – Jul 2018
- Implemented a **graph-based sentence ranking system** based on TextRank for extractive summarization of clinical trial (CT) documents
- Evaluated the extractive summarizer at an avg. ROUGE-L score of 31, efficient with summarizing a 30 pages CT document to a **one-page summary**
- Devised **biomedical-tokenizer** and integrated **biomedical-encoder** with the **transformer model** using Unified Medical Language System (**UMLS**)
- Awarded a **pre-placement offer** among 36 other interns from the company for constantly exceeding expectations in deliverables

**Data Science Intern** | Dipper Technologies Pvt Ltd, Delhi — Nov 2017 – Dec 2017
- Examined 6 months of GPS-timestamp data for 800 trucks with MySQL and segregated useful information with **feature engineering**
- Constructed a neural network model for real-time predictions of the **estimated time of arrival (ETA)** on toll booths using historical travel data
- Analyzed more than 30 delivery routes and **optimized road logistics** for 250 trucks by stoppage clustering using **density-based spatial clustering**

## PROJECTS

**Actionable Insights on Retailer Sales Data** | Prof. S. Sarkar, Computer Science & Engg, IIT Kharagpur — Jul 2018 – Apr 2019
- Implemented an improved **repeat buyers prediction model** on 8 years of retailers sales data and identifying the most valuable customers
- Worked on **customer targeting** for most effective promotional campaigns to increase effective coupon redemption and thus the return of interest

**Development of an Early Warning System** | Prof. J. Maiti, Industrial & Systems Engg., IIT Kharagpur — May 2017 – Aug 2017
- Developed an Android application for **real-time health monitoring** with auto-warning feature to notify of imminent threat to any site worker's health
- Enforced **multi-scale template matching** using OpenCV to automate the data transferring process to a remote database from the central system
- Built a **prediction model** for workers' health condition using multi-label **SVM classifier** with genetic algorithm based hyper-parameter optimization
- Operated with remote **MySQL** database for transferring instantaneous heart rate, WBGT & RSPM data for **heat-stress level prediction** of workers

**Development of a Decision Support System** | Prof. J. Maiti, Industrial and Systems Engg, IIT Kharagpur — May 2017 – Sep 2017
- Constructed an end-to-end DSS to help decision makers utilize historical data to **strengthen occupational safety** and alleviate potential hazards
- Engineered a **user interface** with kivy and added **descriptive** and **predictive analysis** to the system, with evaluation metrics for model comparison
- Created a **genetic algorithm** based optimized model on steel-plant dataset to address questions raised on **risk prediction** of occupational accidents

## ACCOMPLISHMENTS

- Presenting author at International Conference on Emerging Technologies in Data Mining and Information Security (**IEMIS**), **2018**
- Selected in **33 of 83 teams** (279 students) in Microsoft code.fun.do 2018, for **Chatterji: Chatting with Emoji**, with **real-time emoji prediction**
- Chosen among **63 teams of 700 participating teams** nationwide in EXL Excellence Quotient 2018, conducted by EXL Analytics
- Privileged as **1 of 1000 eligible students** across the nation for **Prime Minister's Scholarship Scheme** under National Defence Fund, 2016
- Bagged the position of **81 among over 2000 teams** in Amex Analyze This 2017, conducted by American Express
- Procured gold medals for acquiring the **1st position in the campus** in Inter-Hall Cartooning and Open-IIT Cartooning Competitions at IIT Kharagpur

## POSITIONS OF RESPONSIBILITY

**Fine Arts Vice Captain, Captain & Advisor** | Patel Hall of Residence, IIT Kharagpur — Jul 2017 – Present
- Accountable for the administration of **30 members** in the team, representing our hall in 4 events of Social & Cultural General Championship
- Successfully coordinated and led the team to win the **Fine Arts Cup** after **4 years**, by securing 1st position among all other 22 halls in campus

**Core Team Head** | COMPOSIT 2018, IIT Kharagpur — Jul 2017 – Apr 2018
- Spearheaded conduction of Excavate, the Data Analytics Competition in 25th edition of the departmental fest, COMPOSIT 2018
- Shouldered management of around **200 participants** during the fest and mentored a team of 20 core team members and 15 associate members

## COURSEWORK

- Linear Algebra
- Probability and Stochastic Processes
- Operations Research
- Software Engineering
- Programming & Data Structures
- Design and Analysis of Algorithms
- Genetic Algorithms
- SQL for Data Science
- Convolutional Neural Networks
- TensorFlow for Deep Learning Research
- Natural Language Processing
- Deep Learning

## TECHNICAL SKILLS

- **Advanced Knowledge:** Python, TensorFlow, PySpark, Keras, MongoDB, MySQL, Git, Linux
- **Basic Knowledge:** C, C++, Hadoop, OpenCV