ALOK KUMAR

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4th year Mathematics and Computing, Indian Institutes of Technology, Delhi
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ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech and M.Tech in Mathematics & Computing	Indian Institute of Technology, Delhi	7.55
2017	CBSE	Jawahar Navodaya Vidayalya, Kottayam,Kerela	91.8%
2015	CBSE	Jawahar Navodaya Vidayalya,Buxar Bihar	10

SCHOLASTIC ACHIEVEMENTS

- Qualified **Regional Mathematics Olympiad (RMO)** 2014-2015
- Represented Patna Region for **Indian National Mathematics Olympiad (INMO)** 2014-2015
- Won **Samsung Star Scholarship** 2017-2019
- Selected for **Panasonic Scholar Program** 2017-2021

INTERNSHIPS

• **Samsung, Bangalore** (May 2020 - July 2020) : **Resource Allocation and Prediction of Usage Time of Real Time Customers for N-Dimensional Cloud Computing Service**
- Implemented an efficient greedy solution for decision making in order to approximate the Maximum overall Profit
- Accepting or Holding or Rejecting a Real Time Customer having constrain for Premium and Non-Premium Customers
- Predicted the distribution of Customer's Usage Time of different resources for future arrival of flow
- Used different techniques (**Autoregressive, Moving Average, Integrated, ARIMA**) for Forecasting

PROJECTS

• **Search Engine** : (*Amitabha Bagchi* - [Department of Computer Science, IIT Delhi]) (Oct 2018 - Nov 2018)
- Finding the "most relevant" set of webpages containing desired query according to their relevance order
- Calculating "Probabilistic Relevance", "Term Frequency" and "Inverse Document Frequency" of webpages
- Finding the relevance of collections of webpages with the help of Scoring function

• **Mobile Phone Tracking System** :(*Amitabha Bagchi*-[Department of Computer Science, IIT Delhi] (Aug 2018-Sep 2018)
- Solving simplified version of fundamental problem of cellular networks
- Switching On/Off a Mobile and keeping track of it's base station
- Finding the shortest path between base station of two phones and establish connection when a phone is called

• **Social Media Platform** : (*Amitabha Bagchi* - [Department of Computer Science, IIT Delhi]) (Nov 2018 - Dec 2018)
- Simplified version of publish-subscribe Scoial platform like Twitter, Instagram
- Subscribing/Un-Subscribing to users and publishing New Posts, Share Post, Comments by users
- Reading Posts of subscribed publishers according to the recent post preferred the most

• **Simple Android App** : (*Self Made*) (May 2019 - July 2019)
- Uses "Firebase" Google Cloud Messaging Platform
- To create Customizable Surveys to collect Customers Feedback
- To Submit users Data(like responses to various questions) and required documents

• **Sports league Team(s) Eliminator**: (*Minati De* - [Department of Mathematics,IIT Delhi]) (April 2020)
- Find which team(s) have been mathematically eliminated in a league given their standing at some point during season
- Implemented Maximum flow formulation using **Ford-Fulkerson** Algorithm
- Using **Min Cut** found set of team(s) for a proper reasoning behind the elimination of a team

• **Hand Written Digit Recognition** : (Dr. Jayadeva) (Jan 2020 - Feb 2020)
- Made a multiclass neural network classifier that classifies each image as corresponding digit.
- Implemented Back Propagation with flexible no of Hidden layer

TECHNICAL SKILLS

• **Computer Languages** : Java, Python, Matlab, HTML
• **Software Tools** : Android Studio, Autodesk Inventor pro, Jupyter Notebook

EXTRA CURRICULAR ACTIVITIES

• Former **Robotics Club** representative (IIT Delhi)
• Represented Robotics Club IIT Delhi on **TechFest**-Asia's Largest Science Technology Festival at IIT Bombay 2017
• Activity Head for Guest Lecture of **Tryst 2019** Technical Fest of IIT Delhi
• Production Executive annual Clutural Festival of IIT Delhi **Rendezvous 2019**