KARTIK CHOUDHARY

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Electrical Engineering	Indian Institute of Technology, Delhi	7.455
2015	AISSCE, CBSE	Step By Step High School, Jaipur	93.0 %
2013	AISSE, CBSE	Seedling Modern High School, Jaipur	9.4 / 10

SCHOLASTIC ACHIEVEMENTS

- **Joint Entrance Examination (JEE) Advanced:** Secured AIR 321(GE) among 1.5 lakh candidates qualified for the exam
- **KVPY fellow:** Eligible for scholarship under Kishore Vaigyanik Protsahan Yojana (KVPY) conducted by IISc, Bangalore (2014)

INTERNSHIPS

- **Claym Media and Tech Pvt. Ltd., Gurgaon**: *Fraud detection in mobile advertising* | Java (May, 2018 - Jul, 2018)
  - Created utility to standardize reports coming from different platforms **each having different formats** for storing data
  - Developed code to detect frauds like: Click Spamming, Fake Attribution, Non-App Store Installs and Country Conflict
  - Detected possibly fraudulent installation statistics, **using APIs** to retrieve app version data from **Google Play Store**
  - Fabricated **Graphical User Interface** (GUI) to supplement utility, enabling **Operations Team** to use Fraud-detection tool

PROJECTS

- **Occupancy learning in commercial spaces (Prof. Seshan Srirangarajan)**: *B. Tech Thesis* (July, 2018 - Present)
  - **Predicting occupancy of rooms** in Lecture Hall Complex by leveraging models and algorithms like **HMM** and **KNN**
  - Use institute's attendance system data for training, evaluate performance by using energy consumption data for LHC
  - Potential uses include improvements in **Room Booking System** and in **automated cooling systems** to save energy
- **Voice Enabled Chat-bot (Prof. Arun Kumar):** *Summer Project 2017* | Python (May, 2017 - Jul, 2017)
  - Implemented an **LSTM Recurrent Neural Network** using TensorFlow to train a chat-bot with the **ability to retain context**
  - Used a large corpus extracted from Twitter with **5M tweets and their replies** to get optimal results after training the chat-bot
  - Tested and benchmarked various regularization methods such as **dropout** and **early-stopping** to optimize for performance
- **Signal and Noise Analysis (Prof. Seshan Srirangarajan):** *Adv. Digital Signal Processing* | MATLAB (Spring 2018)
  - Used **Correlation Processing** and **End-Point Detection** to estimate range and velocity of the target in a noisy environment
  - Used **auto-correlation** and **cepstrum** method to detect pitch of a signal for various noise levels and compared the results
  - Processed ECG signals to determine the **QRS complex** and calculate various statistics like beat-by-beat heart rate
- **Image Correction and Restoration (Prof. Monika Aggarwal):** *Digital Image Processing* | MATLAB (Spring 2018)
  - Implemented an image restoration model to denoise an image and remove blur using **Wiener** and **Lucy-Richardson** filters
  - Used **Hough Transform** to remove lens artifacts and RGB channel information to improve illumination of images
- **Classification and Clustering Algos. (Prof. Sumeet Agarwal):** *Intro. to Machine Learning* | MATLAB (Fall 2017)
  - Performed comparative analysis of different classification and clustering algorithms on **MNIST handwritten digits dataset**
  - Developed models implementing **SVM**, **CNN** and **Sparse Autoencoders**; Employed **PCA** for dimensionality reduction
  - Unsupervised learning : **Implemented GMM using EM algorithm** and compared the results with K-means clustering
- **Complexity Analysis of Algorithms (Prof. Amitabha Bagchi):** *Data Structures and Algorithms* | Java (Fall 2016)
  - Implemented **Dijkstra's Algorithm** on a weighted graph to find the shortest path between nodes in a Taxi Aggregator Service
  - Emulated a hierarchical call routing structure using **k-ary trees** to track mobile phone location and create new exchanges
  - Implemented a search engine using **inverted search index** that assigns priority to webpages based on relevance of words

TECHNICAL SKILLS

- **Programming Language:** C, C++, Java, Python | **Software and Tools:** TensorFlow, MATLAB, Xilinx ISE, Arduino

EXTRA CURRICULAR ACTIVITIES

- **Winner**, Inter-hostel Stage Play 2015, **Actor**: First victory in any dramatics club event in the history of the hostel
- **First runner-up**, Inter-hostel Stage Play 2016, **Director and Actor**: Won prestigious the award for **Best Director**
- **Participant**, Stage Play, Rendezvous 2016, **Actor**: Represented IIT Delhi on **national stage** at North India's largest festival

POSITIONS OF RESPONSIBILITY

- **Secretary, Electrical Engineering Society (EES)** (Apr, 2017 - Apr, 2018)
  - Organized and managed various technical events like **Coding Hackathon** and many others throughout the year
  - Executed event **Intern Ke Funde** to help students of Electrical Engg. Dept. with the process of summer training
- **Representative, Dramatics Club (BRCA)** (Apr, 2016 - Apr, 2017)
  - Successfully guided and led the hostel team to all inter-hostel events organized by the **dramatics club** throughout the year
  - Organized several events, screenings and plays at **institute level** as a part of the BRCA's representative team