# Aditya Chetan

Email : aditya1617@iiitd.ac.in
Mobile : +91-9599302170


## Education

- **Indraprastha Institute of Information Technology, Delhi** — New Delhi, India
  *B. Tech., Computer Science and Applied Mathematics; CGPA: 8.65* — *Aug. 2016 – Present*
- **Lal Bahadur Shastri Sr.Secondary School** — New Delhi, India
  *High School; Percentage: 94.8%* — *2014 – 2016*

## Publications

- **Aditya Chetan***, Brihi Joshi*, Hridoy Sankar Dutta*, Tanmoy Chakraborty. CoReRank: Ranking to Detect Users Involved in Blackmarket-based Collusive Retweeting Activities. In *12th ACM International Conference on Web Search and Data Mining (WSDM 2019).* (Acceptance Rate: **16%**, CORE2018 A*)
- Hridoy Sankar Dutta, **Aditya Chetan***, Brihi Joshi*, Tanmoy Chakraborty. Retweet Us, We Will Retweet You: Spotting Collusive Retweeters Involved in Blackmarket Services. In *The 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2018).* (Acceptance Rate: **15%**)
- Nishtha Madaan, Gautam Singh, Sameep Mehta, **Aditya Chetan***, Brihi Joshi*. Generating Clues for Gender based Occupation De-biasing in Text. `arXiv:1804.03839 [cs.CL]`.

* Equal contribution

## Skills

- **Relevant Courses**: Machine Learning, Natural Language Processing, Linear Algebra, Scientific Computing, Probability and Statistics, Real Analysis, Analysis and Design of Algorithms, Discrete Mathematics, ODEs & PDEs, Stochastic Processes and Applications
- **Languages**: `Python, Java, C#, C++, Go`
- **Tools & Technologies**: `Sci-kit Learn, NLTK, NumPy, SpaCy, Pandas, Flask, JQuery, git, MS Visual Studio, MATLAB, MVC, Tensorflow, Docker`

## Research Experience

- **Laboratory for Computational Social Systems (LCS2)** — New Delhi, India
  *Undergraduate Researcher* — *Jan 2018 - Present*
  - **Understanding adversarial collusive activities in OSNs**:
    *Advised by: Dr. Tanmoy Chakraborty*
    - Worked on detecting collusive retweeters on Twitter, focussing on users of freemium services
    - Curated an open dataset of manually annotated users from various freemium services
    - Proposed a novel set of features for detection and tested its effectiveness on several machine learning models
    - Developed an unsupervised and semi-supervised approach for detection of collusive retweeters
    - **Keywords:** *Machine Learning, OSNs, Data Science*
- **Indraprastha Institute of Information Technology, Delhi** — New Delhi, India
  *Undergraduate Researcher* — *May 2018 - Present*
  - **Cost Optimisation in Transportation**:
    *Advised by: Dr. Pravesh Biyani*
    - Worked on developing methods to optimize the cost of allotting vehicles on transportation demand data
    - Studied past work on coloring algorithms for dense graphs and analysed them for our use case
    - Developed a dynamic programming solution for allotment of vehicles so as to optimize cost
    - Developed a web API that runs our solution on the provided input data
    - **Keywords:** *Optimisation, Graph Coloring, Linear Programming, Flask*

- **IBM India Research Laboratory** — New Delhi, India
  *Undergraduate Researcher* — *Nov 2017 - Present*
  - **Complex Answer Retrieval**:
    *Advised by: Dr. Sumit Bhatia*
    - Working on the problem of Complex Answer Retrieval.
    - Did a literature survey on existing approaches to artificial Q&A.
    - Currently exploring meticulous IR approaches to help improve accuracies of downstream DL models in Q&A.
    - **Keywords:** *NLP, Complex Answer Retrieval, IR, Deep Learning*
  - **Persuasive Style Transfer**:
    *Advised by: Dr. Deepak Padmanabhan (QU, Belfast)*
    - Detecting and removing *"persuasiveness"* quality in political speeches.
    - Modelled the detection and removal of *"persuasive"* quality in text as an optimisation problem.
    - **Keywords:** *NLP, Machine Learning, Deep Learning*
  - **Occupational Debiasing [code][paper]**:
    *Advised by: Dr. Sameep Mehta*
    - Developed a system for detecting Occupational Gender Bias in text, taking into account the influence of demography and time-frame.
    - Developed and curated a dataset comprising of various occupation names and occupational evidences.
    - Proposed a pipeline that detects potential gender bias in occupations.
    - **Poster accepted at GHCI 2018**
    - **Keywords:** *NLP, Machine Learning, Flask*

## Work Experience

- **Microsoft India** — Hyderabad, India
  *Global Delivery Intern* — *June 2017 - July 2017*
  - **Member of the Emerging Capabilities group**:
    - Worked on developing and integrating chat-bots into the workflow of the MS Sales team, to help handle clients
    - Learned in detail about `C#`, the `.NET` framework and `MVC` framework to develop web apps using Agile methodology
    - Developed an FAQ chat-bot for new hires of my team from scratch
    - Learned how to use Azure Cloud Services to deploy apps and gained experience in troubleshooting deployed apps
    - **Keywords:** *Chat-bots, Microsoft Bot Framework, Microsoft Azure, Agile, C#, .NET*

## Awards

- **Google Travel Grant**: Awarded full travel support of 2800 USD for visiting WSDM 2019
- **Dean's Award for Innovation R&D**: Awarded to students who work on Research projects beyond coursework. Awarded for the academic year 2017-18
- **Best Technical Poster Runner-up at GHCI 2018**: Received for the project, "Generating Clues for Gender based Occupation De-biasing in Text"

## Projects

- **img2LaTeX [demo][code]**:
  - An end-to-end model for converting handwritten mathematical expressions to compilable LaTeX
  - Made use of image segmentation, supervise classifiers such as CNNs, SVM, etc. and heuristics for code formation
  - Developed as a course project for Machine Learning (CSE343) at IIIT Delhi in Monsoon 2018
  - **Keywords:** *Machine Learning, Deep Learning, Image Processing*
- **SemEval19 Task 3 : EmoContext**:
  - Worked on the task of contextual emotion detection in text. This was a shared task for a workshop at ACL 2019.
  - Used deep learning models like LSTMs, DeepMoji and ElMo for trying to increase accuracy.
  - **Keywords:** *NLP, Contextual emotion detection, Deep Learning*

- **IEDatron [demo][poster]**:
  - This project aims to improve a human's ability to control a robot, through a robot that copies its actions
  - Uses Computer Vision techniques with `Microsoft Kinect v1.8`, and controlled with the help of `Arduino Mega`, `HC-05` Bluetooth module and Servo brackets
  - Was amongst the top 10 projects in the first-year batch and received a mention in the Director's blog [link]
  - **Keywords:** *Computer Vision, Robotics, IoT*
- **Learn My Way [code]**:
  - A peer learning system packaged as an Android app to ease sharing of academic resources amongst students
  - Consists of an upvote-downvote system for moderation and allows uploaders to tag resources into categories
  - **Keywords:** *Android, Mobile-apps, peer-learning*
- **Chain Reaction [code]**:
  - A JavaFX-based MacOS application based on the famous Android-based game
  - Includes features like undo, resume and multiplayer mode
  - **Keywords:** *JavaFX, GUI, MacOS, Java, Object-oriented programming*

## Co-curricular Activities

- **Volunteering:**
  - **IIITD Summer Camp 2017:** Was part of the volunteer group of the annual Summer camp at IIIT Delhi, where middle-school children from Govt. schools are introduced to different concepts in Mathematics, Computer Science, General studies, etc. and counselled about their future career prospects. This initiative was applauded by the Govt. of New Delhi. [coverage]
- **Talks**:
  - **Mathematics of ML**: An DIY talk to demonstrate the mathematics behind basic machine learning models. Delivered at a Women Who Code Delhi meetup. [notebook]
  - **Maths in LaTeX**: A short talk on how to use LaTeX for writing mathematical content delivered at the Évariste Mathematics club at IIIT Delhi. [slides]
- **Clubs**
  - Founding member of the Évariste Maths club at IIIT Delhi. Link to the club's ideation doc: [link]