# ARSH GAUTAM

**Junior Undergraduate**
**Computer Science and Engineering**
**Indian Institute of Technology, Delhi**

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## EDUCATION

**Indian Institute of Technology, Delhi, India**                    *2017 - 2022 (Expected)*
- Integrated B.Tech and M.Tech in Computer Science and Engineering (**GPA: 8.526/10**)

## INTERNSHIPS

**Software Developer Intern, Stealth Mode Startup, Bay Area, USA** (*Remote, JAVA)*        *Summer 2020*
- Deployed Eclipse Che IDE on Kubernetes cluster on AWS to be used by employees during remote work.
- Worked on developing proto and mappers to integrate several APIs. Used tools like Postman for testing.

**Software Developer Intern, Bending Spoons, Milan, Italy** (*Swift*)        *Summer 2019*
- Trained on state of the art techniques in iOS development and developed various kinds of applications.
- Wrote unit tests to verify functionality and compare performance of functions in different applications.
- Built User Interface for applications using open-sourced libraries such as Tempura and Katana.

## MAJOR PROJECTS

**Tweet Sentiment Classifier** (*Course Project under Prof. Parag Singla, Python*)        *Spring 2020*
- Developed a Naive Bayes Classifier for sentiment prediction. Training data consisted of 1.6 million tweets.
- Used TF-IDF features with model using Scikit-Learn's TFIDF vectoriser and Gaussian NB module.

**Non-preemptive and Preemptive Scheduler** (*Course Project under Prof. Sorav Bansal, C*) *Spring 2020*
- Built some long computation tasks as fibers. Designed non-preemptive and preemptive schedulers for task.
- Goal was to make the terminal to be responsive to new commands when some tasks are already running.

**FLIP : A Cannon playing AI bot** (*Course Project under Prof. Mausam, C++*)        *Autumn 2019*
- Developed an AI bot to play the game of Cannon. Used minimax algorithm with alpha-beta pruning.
- Used Zobrist Hashing to optimise the performance. Achieved a search depth of about 8-10 moves.

**Multiple String Alignment** (*Course Project under Prof. Mausam, C++*)        *Autumn 2019*
- Used a mixture of local search, hill climbing, informed heuristic search, simulated annealing, graph search.
- Combined these algorithms with dynamic programming to solve the problem of multiple string alignment.

**Network Messaging Infrastructure** (*Course Project under Prof. Aaditeshwar Seth, JAVA*) *Autumn 2019*
- Created a messaging infrastructure allowing secure communication between several users registered.
- Messages are channelled through a central server, and security is ensured by end-to-end encryption.

**Ambrogio : A bill splitting bot** (*Self Project, JAVA*)        *Spring 2019*
- Developed an application to keep a track of group expenses and report the financial situation of the group.
- Designed a clever subset sum algorithm to ensure minimum transactions required is reported every time.

**ARM CPU based Computer** (*Course Project under Prof. Anshul Kumar, VHDL*)        *Spring 2019*
- Implemented a complete ARM CPU based computer using multi-cycle design using BASYS3 FPGA board.
- Implemented DP, DT, multiply, branch, and halt instructions. Included interrupts and serial I/O in design.

**Krivine and SECD Compiler** (*Course Project under Prof. Sanjiva Prasad, OCaml*)        *Spring 2019*
- Created definitional interpreter and a stack machine for a toy language. Built scanner and parser.
- Implemented type checking. Programmed Call By Value(CBV) and Call By Name(CBN) Interpreters.

## SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 72** among 200,000 candidates in JEE Advanced 2017 scoring 310/366 marks
- Secured **All India Rank 62** among 200,000 candidates in KVPY 2015 and got awarded KVPY fellowship
- Cleared Regional Mathematics Olympiad(RMO) 2015 securing **zonal rank 11** and qualified for INMO.
- Secured Place in merit list **national top 1%** in NSE Physics, NSE Chemistry and NSE Astronomy 2017.
- Rated **1786-Expert** on **Codeforces** platform and ranked **900 among 23000+** programmers from India.

## EXTRA CURRICULAR ACTIVITIES

- Marketing Co-ordinator at **ACES-ACM IIT Delhi**
- Executive at **Entrepreneurship and Development Cell, IIT Delhi**