Arham Chopra

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EDUCATION

2018	Bachelor of Technology	IIT Kanpur	9.7*/10.0
2014	Intermediate(+2)	Emmanuel Mission School	95.40 %
2012	Matriculation	Choithram International School	91.80 %

* As calculated at the end of 6th semester

SCHOLATIC ACHIEVEMENTS

- **All India Rank 114** in **IIT-JEE Advanced**, *2014* among 150 thousand students
- **All India Rank 588** in **IIT-JEE Mains**, *2014* among 1.4 million students
- Recipient of **Kishore Vaigyanik Protsahan Yojana Fellowship**, *2014*
- Among **Top 1**% in Rajasthan in **National Standard Examination in Physics**, *2014*
- **National Rank 81** in **National Science Talent Search Examination**, *2014*
- **International Rank 15** in 1st level of **National Science Olympiad**, *2014*

INTERNSHIPS

- ***Apache Kafka Library***, *Nutanix, Bangalore*   *May-Jul 2017*
  - Designed a framework for automating benchmarking of CPU, memory, throughput rate, etc. metrics for **Apache Kafka**
  - Built a library module to interact with Kafka in terms of message communication, CRUD operations on topics, and utility operations over the nodes like safe removal of nodes from a cluster, rearranging the topics over the cluster, etc.
  - Implemented APIs for reading data via different modes either in bulk or through a stream of messages via websockets

- ***ACID Transactions in MongoDB***, *Elanic, Bangalore*   *May-Jul 2016*
  - Built a **node.js** module to support **ACID** transactions in **MongoDB** along with features like **savepoint, commit, rollback** by extending **Mongoose**. Used **Redis** to implement functionality of redo logs in **Oracle** and other features.
  - Built a **Restify.js** based back-end Barcode Scanner app and designed a website for the Elanic Premiere League event

PROJECTS

- ***Almost C Compiler***, *Course Project, CS335*   *Jan-May 2017*
  - Implemented minimal features of a **C-MIPS compiler** in **PLY** and tested with programs as quicksort, merge sort, etc.
  - Implemented non-trivial features like **type-checking/casting, global array and standard I/O** with terminal

- ***Finding Security Flaws in Zoobar Webserver***, *Course Project, CS628*   *Jan-May 2017*
  - Explored security flaws like buffer overflow attacks, CSRF, XSS, SQL injection, privileges separation in the Zoobar

- ***RailQuery***, *Course Project, CS315*   *Jan-May 2017*
  - Designed an **ANNE stack** based rail enquiry website for answering queries like **trains between stations, train routes, connecting trains between stations, etc.** and optimized the response time using DB structure and indices

- ***NachOS***, *Course Project, CS330*   *Aug-Dec 2016*
  - Implemented parts of the **Standard System Call Library**, different **process scheduling algorithms**, **virtual memory**, **dynamic page allocation strategies** and analyzed their effectiveness in different use cases on the NachOS

- ***Stock Market Prediction***, *Course Project, CS771*   *May-Jun 2016*
  - Implemented 2 different ML models (RNN and SVM) to determine the rise/fall of stock market on the following day based on the data of the previous days and compare the results between them

- ***Voice Command Recognition***, *Robotics Club*   *May-Jun 2015*
  - Developed a voice recognition system in Matlab and voice navigated a bot under different noise environments
  - Employed MFCC and DTW algorithm with noise filters to recognize vocal commands and perform actions accordingly

- ***Other Projects***,
  - Meetup Scheduler(CS252), The Pascal's Triangle(TA201), The Flying Raptor(TA202)

SKILLS

- **Languages**:   *Proficient:* C, C++, Python, Bash   *Familiar:* JavaScript, Scala, SQL, HTML/CSS
- **Tools**: Git, Vim, Matlab, Octave, LaTeX, Postman, Robomongo
- **Databases and Operating Systems**: MongoDB, Redis, MySQL, SQLite, Neo4j, Windows, Linux

RELEVANT COURSES

Randomized Algorithms	Computer Systems and Security	Compilers	Databases
Design and Analysis of Algorithms	Theory of Computation	Operating Systems	Machine Learning Techniques
Data Structures and Algorithms	Logic	Discrete Mathematics	Abstract Algerbra
*Probabilistic Machine Learning	*Computer Networks	*Visual Recognition	Probability and Statistics

* Currently Ongoing

Extracurriculars & Non-Technical Skills

- **Teacing Assistant** in course $ESO207$ under Professor Sumit Ganguly
- 1st prize in **Autodesk Fusion 360 Challenge** in Uttar Pradesh
- 2nd **position overall** as well as in **Embedded** event in 4th **Inter-IIT Tech Meet** representing **IIT Kanpur**
- 2nd and 4th position as well as in 51st and 52nd **Inter-IIT Aquatics Meet** representing **IIT Kanpur** respectively
- Senior Marketing Executive in **Techkriti'16** and Company Coordinator for **Student Placement Office** in 2016-2017