Rahul chunduru
Computer Science & Engineering
Indian Institute of Technology Bombay

160050072
B.Tech.
Male
DOB: 05-02-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.58
Intermediate/+2	Andhra Pradesh Board of Intermediate Education	Bhashyam Junior College	2016	98.50
Matriculation	Andhra Pradesh Board of Secondary Education	Bhashyam High School	2014	97.00

Pursuing **Honors** in **Computer Science** and a **Minor** in **Applied Statistics and Informatics**

Scholastic Achievements

- Currently ranked **7** in the department of Computer Science among **124** students
- Awarded an **AP** grade for exceptional performance in **Linear Algebra, Discrete Structures, Numerical Analysis, Implementation of Programming Languages Lab** and **Biology** courses
- Secured **All India Rank 15** in **JEE (Advanced)** over **140,000** candidates *2016*
- Secured **All India Rank 77** in **JEE Main (B.Tech)** over **1.2 million** candidates *2016*
- Secured **State Rank 5** in **TS EAMCET** among **140,000** candidates *2016*

Scholarships and Olympiads

- Among the **top 32** of the country who cleared **Indian National Math Olympiad** *2015*
- Among the **top 35** of the country who cleared **Indian National Junior Science Olympiad** *2014*
- Secured **1st position** in the **Math Olympiad** conducted by **Maths Dept., IIT Bombay** *2017*
- Placed in **Top 1%** in **National Standard Examination in Astronomy** *2014-15*
- Received **National Talent Search Examination scholarship** organised by **NCERT** *2014*
- Qualified for **Kishore Vaigyanik Protsahan Yojana Fellowship** given by **IISC, Banglore** with **All India Merit list rank 2** *2014-15*

Work Experience and Technical Projects

Google SWE Intern *[May-Jul '19]*
Google LLC., Banglore *Internship*

- Worked with **Google Gpay Credit** team to improve **loan offer conversion rate**
- Worked on infrastructure for notifying **vendor**'s **availability** to the user
- **Designed, developed** and **productionized** the feature end to end using various **Google**'s technologies

Extending Foundations of Differential Privacy *[Jan-Apr'19]]*
Guide: Prof. Manoj Prabhakharan *RnD Project*

- Proposed a differential private mechanism for secure database querying of functions with high *sensitivity* like **maximum**
- Proposed two concepts, **robust privacy** and **flexibility** for analyzing differential private mechanisms and established their **composition** theorems
- Submitted paper to **NeurIPS 2019**

Improvising SAFE *[May-Jul'18]*
Guide: Prof. Bhaskar Raman *Summer Project*

- Extended features of **SAFE**, the quiz conducting app of IIT Bombay
- Implemented user monitoring feature for the app on a **raspberry pi** using **pcap** library
- Implemented **key sharing** using Wifi-hotspot for decryption of encrypted quiz questions downloaded from server

Music Sheet Player *[May-Jul'17]*
Guide: WnCC Club, IIT Bombay *ITSP Project*

- Designed an interactive **android application** which plays music on a captured music sheet image
- Employed **OpenCV**'s template matching for identification of note frequency and duration and **Android Studio** libraries to play their corresponding audio files

Key Academic Projects

DeepBach *[Jan-Apr'19]*
Guide: Prof. Sunita Sarawagi, Course: CS726 *IIT Bombay*

- Generated music in the style of Bach using **deep learning**
- Experimented with several model architectures such as **LSTMs, RNNs**, and a small-size **Transformer** network to produce more aesthetically pleasing pieces

Image Splicing Detection *[Jul-Nov'18]*
Guide: Prof. Ajit Rajwade, Course: CS663 *IIT Bombay*

- Implemented a technique to identify tampered images leveraging inconsistencies in **local noise variance**

An Investigation of Spectre Vulnerability *[Jul-Nov'18]*
Guide: Prof. Bernard Menezes, Course: CS341 *IIT Bombay*

- Analysed and studied different variants of the **Spectre** attack and related concepts such as **cache timing analysis** and **out-of-order execution**
- Demonstrated the proof of concept of Spectre with a JavaScript program that reads sensitive data from a web browser using the **flush-and-reload** technique

Cryptanalysis *[Jul-Nov'18]*
Guide: Prof. Manoj Prabhakaran, Course: CS406 *IIT Bombay*

- Studied and implemented **linear, differential** and **integral** cryptanalysis
- Broke **Substitution Permutation Network** cipher using linear and differential cryptanalysis methods

Question Bank and Test Platform *[Jul-Nov'18]*
Guide: Prof. Sudarshan S, Course: CS387 *IIT Bombay*

- Developed a **web application** that enables instructors to **create, schedule** and **evaluate** online tests
- Backend uses **Django** with **postgresql** database and performance intensive queries optimized in direct **SQL**

A Generic Institute App *[Jul-Nov'17]*
Guide: Prof. Kavi Arya, Course: CS251 *IIT Bombay*

- Designed a **customizable social app** for sharing information across department using **Google Firebase**
- Group chat and notifications have **real time performance** achieved using **NodeJs** and **Firebase** clouds functions
- Course websites are monitored using **jQuery** and updates are notified to the students of corresponding groups

Mini Compiler *[Jan-Apr'19]*
Guide: Prof. Uday Khedkar, Course: CS316 *IIT Bombay*

- Developed a compiler and interpreter for subset of C supporting functions, recursion, scope levels and control sequences
- Used **Lex** for tokenizing, **Yacc** for parsing and constructed ASTs to generate **MIPS** assembly code

Transport Network Analyser *[Jan-Apr'17]*
Guide: Prof. Amitabha Sanyal, Course: CS152 *IIT Bombay*

- Simulated a transport network in **Racket**, interpreting it as an electrical circuit
- Traffic in the network is computed by solving linear equations using **Gaussian method** and employed Racket's GUI to visualize the changes with time

Railway Controller Logic Design *[Jan-Apr'18]*
Guide: Prof. Supratik Chakraborty, Course: CS254 *IIT Bombay*

- Programmed a Spartan **FPGA** board with the logic of railway controller implemented in **VHDL**

Positions Of Responsibilities

- Served as **TA** for **Discrete Structures** under Prof. Manoj Prabhakharan at **IIT Bombay** *[Jul-Nov'19]*
- Mentored students in **Summer of Science program** offered by **MnP club, IIT Bombay** *[May-Jul'19]*
- Mentored students in **CS101 course** as part of **DAMP Summer Improvement Program** *[May-Jul'18]*

Technical Skills

Programming	C/C++, Python, Java, Bash, MATLAB, Prolog, Racket(Scheme)
Web Development	HTML, CSS, SQL, JavaScript, Django
Software	Pytorch, Git, Wireshark, Octave, gnuplot, AutoCAD, LaTeX