Akash Trehan   150050031
Computer Science & Engineering   **UG Second Year**
Indian Institute of Technology Bombay   **Male**
                                                    DOB: 21 May 1997

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2017	9.94
Intermediate/+2	CBSE	Guru Ram Dass Public School	2015	94.80
Matriculation	ICSE	St. Joseph's Convent School	2013	96.83

Academic Achievements

- Ranked **2nd** in the institute among 900 students
- Secured **All India Rank 24** in **JEE Advanced** out of 150,000 students
- Received IIT Bombay's **Institute Academic Prize** 2015-16
- Secured **AP grade** in Biology and Engineering Drawing for Exceptional Performance
- Secured **100.00 percentile** in JEE Main amongst **1.5 million** students across India
- Awarded the **Kishore Vaigyanik Protsahan Yojana** (KVPY) Fellowship Award by Department of Science and Technology, Govt. of India
- Awarded the **National Talent Search Examination** (NTSE) scholarship by National Council of Educational Research and Training (NCERT)

Open Source Contributions

- **OWASP ZeroDay Cyber Research Shellcoder** | *Open Web Application Security Project*
  - Software written in python and assembly to generate customized shellcode and obfuscate scripts; selected for **Blackhat London** and **DEFCON 2016** Labs
  - Added a **new OSX x86 shellcode module** using **x86-assembly** for penetration testing on OSX. This module was **successfully demoed at DEFCON 2016**
  - Also made various enhancements to improve the user experience
- **SymEngine** | *Fastest Symbolic manipulation library written in C++*
  - Added a new Infinity class to handle calculations which could lead to infinitely large values
  - Added new mathematical functions for manipulations of symbolic polynomials and other trigonometric functions
- **wptview** | *Mozilla*
  - Mozilla's web application for displaying the results of web-platform-tests
  - Improved code quality and added new features for proper display of errors in the concerned web platform test

Development Projects

- **EVENTual - Sharing events through QR codes** | *Institute Technical Summer Project (Jan '16 – Present)*
  - Created a platform for **creating and sharing events** easily, automating the task of filling details in the calendar by creating shareable links and QR Codes
  - Implemented a **Django backend** to serve the EVENTual website and **Android app**
  - Implemented security features like generating random URLs for events to allow use of privately shared events
- **MooDLD - Instant Moodle Downloader** | *Institute Academic Council*   *(Sep '15 – Aug '16)*
  - Made a **one-click downloader** in Python using TkInter GUI for **tracking and auto-downloading** course files from Moodle, an open source Course Management System used at IIT Bombay
  - Used by more than 500 students already and soon to be officially released in the institute
- **LendIt - Book lending website** | *InOut Hackathon - NIT Surat*   *(Aug '16 – Aug'16)*
  - Got selected among the **top 5** development projects among 50 projects and went through to the final round
  - Implemented a backend using Django for user interaction, sending notifications, searching and lending books, maintaining a user profile, a database of books lent and borrowed by each user among other features

- **Institute Hacker News** | *Student Technical Activity Body(STAB) - IIT Bombay*   *(Apr '16 – Present)*
  - Website to help students share interesting technical information they find on the internet and have discussions about them
  - **Implemented the backend** using Django for managing database, authenticating users using Single Sign On(SSO) login and managing upvotes and comments on various shared links
  - To be officially released in the institute this year
- **Checkers with AI** | *Guide: Prof. Varsha Apte, CS101 Project*   *(Sep '15 – Oct '15)*
  - Used **Minimax** to make a one player checkers with Computer as opponent
  - Used the 'simplecpp' library, developed by Prof. Abhiram Ranade at IIT Bombay, for graphics

Interests

Web application security, Software Security, Software Development

Technical Achievements

- **3rd Runner Up** in **Kandy Sugar Hackathon** 2016 organised by kandy.io and Web & Coding Club
- **1st** position in **XLR8 2015** for making a remote controlled obstacle crossing robot
- **35th** position among 430 teams in **Backdoor Capture The Flag 2016**
- Working on **Network and Information Security** under Seasons of Code initiative learning new hacks and participating in various Capture the Flag competitions
- **Conducted a 4-hour hands-on workshop** in freshman year on **Arduino programming** for **50+** students
- Made a **Remote-controlled Airplane** and an **Autonomous Line Follower**

Other Projects

- **Feed'er** | *CS251 course project under Prof. Sharat Chandran* - Android app linked to a website supported by a Django backend for collecting feedback from students for various course offerings at IIT Bombay
- **Breakout** - The classic game of breaking bricks to get points made in C using Stanford Portable Library
- **Video RPG** - Video Role Playing game developed for Kandy Hackathon
- **Stopwatch with Arduino** - Fully functional stopwatch made by programming an arduino and an LCD screen

Position of Responsibility

- **Web Convener** | *Student Technical Activities Body(STAB) - IIT Bombay*   *(May '16 – Present)*
  - Maintaining and adding features all websites relating to the technical work in the institute
  - Developing new websites to promote technical awareness and sharing of technical knowledge among students
- **Volunteer** | *Web and Coding Club - IIT Bombay*   *(May '16 – Present)*
  - Coordinating events and **heading Capture The Flag (Information Security) sessions** of one of the largest college level programming clubs in India aimed at inspiring students to take up programming as a hobby
  - **Co-mentor** of Rattlesnake, a project under the **Seasons of Code** initiative to teach **python** to beginners

Programming Skills

Languages - C/C++, Python, Bash, x86-assembly(basic), JAVA(basic), Scheme(basic), Javascript, R
Web Development - Django, HTML, CSS, jQuery(basic)
Miscellaneous - LaTeX, Arduino, Git, Make, Cmake, MATLAB(basic)

Extracurriculars

- Completed NSO course in **Guitar** at IIT Bombay
- Participated in and helped organise IIT Bombay Intervarsity **debate** competition
- Represented hostel in **Coding General Championship**
- Write a **blog** on topics related to information security and write-ups for various Capture The Flag problems
- Active participant in various **hackathons** including Microsoft code.fun.do and Lenovo Game Jam