



Prince Rudranarayan Sharma
Aerospace Engineering
Indian Institute of Technology Bombay

170010017
UG Third Year (B.Tech.)
Male
DOB: 12/08/1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	6.52
Intermediate/+2	Maharashtra State Board	K. M. Agrawal College	2016	84.00
Matriculation	Maharashtra State Board	New Sunrise English High School	2014	91.80

SCHOLASTIC ACHIEVEMENTS

- Secured **97.08 Percentile** in JEE Advanced 2017 out of *200,000* students
- Ranked in **Top 0.28%** in JEE Main 2017 out of *1.2 million* students

TECHNICAL EXPERIENCE

Threat Research Intern — Endpoint Security CrowdStrike, Inc

May - July '19

- Analyzed & Documented CrowdStrike's Falcon behavior upon detonating 14+ malicious files developed using Metasploit Framework's file-type exploit for .docs, .pdf, .ace files.
- Reverse Engineered malicious PE files** to identify malicious code using tools like IDA Pro, x64dbg, Wireshark, etc. and documented research with a detailed technical analysis
- Analyzed Metasploit's Evasion module also experimented various Evasion techniques with Shellter
- Prepared a New-Intern-Handbook for getting started with CrowdStrike's Falcon and Endpoint Security

System Administrator — System & Network Management AcadPal

Jan- Mar '19

- Reengineered company's systems setup, establishing automated server generation routines, optimizing system performance, installing patches, establishing system monitoring and maintaining security protocols

KEY PROJECTS

Visualizing Solar Cell Characteristics — Interactive Plotting Prof. Narendra Shiradkar | Electrical Dept | IIT Bombay

Summer '18

- Developed an interactive dashboard with dynamic plots to visualize data obtained from solar cell
- Exported the interactive graphs using **BokehJS** for an Online Book on Solar Cells analysis

Big Data Analysis — Data Analysis and Interpretation Prof. Prabhu Ramchandran | Aerospace Department | IIT Bombay | Course project

Autumn '18

- Analyzed the **Wisconsin data set for Breast Cancer** and built a statistical model using the tumor data
- The model made predictions based on the previous data of mean radius, area of the tumor cell and other parameters through **Linear Regression** achieving a pre-defined level of confidence
- Analyzed data using various libraries like **Numpy, Pandas, Scipy** etc in **Python**

Detecting Emojis in Text Messages — Deep Learning Seasons of Code 2018 | IIT Bombay

Summer '18

- Studied the underlying concepts of **Neural Networks** and training them via backpropagation
- Read about architectures used to model sequential data like Vanilla-RNN, LSTM, and GRU
- Built and trained an LSTM network to read tokenized text and generate relevant emoji

Trajectory Modelling of Delta II 1920-10, ROSAT — Spaceflight Mechanics Prof. Ashok Joshi | Aerospace Department | IIT Bombay | Course project

Spring '19

- Designed the complete **ascent mission** trajectory of the four stages of **Delta II 1920-10**, writing comprehensive code in **Python** to find burn profile and the gravity turn at each stage
- Found out the optimal **orbital manoeuvres** taken by **ROSAT** to reach final orbit from point of release in actual mission time and made an simulation of the same

Computation on potential flow theory — Fluid Mechanics Prof. Aniruddha Sinha | Aerospace Department | IIT Bombay | Course project

Autumn '18

- Used the concept of stream function to obtain and visualize the streamlines for **super-critical circulation** of a **rotating cylinder** in **Python** by superimposing results of doublet, vortex and uniform flow.
- Analysed and presented the effects of changes in parameters to the distribution of streamlines

TECHNICAL SKILLS

- **Programming** - Python, C/C++ , JavaScript, HTML5, CSS3, Bash
- **Softwares** - Vim, Git, GitHub, \LaTeX , Jupyter, AutoCAD, SolidWorks
- **Security Tools** - IDA pro, OllyDbg, x64dbg, Metasploit, VMware, Wireshark, Nmap, Kali
- **Security skills** - Malware, Vulnerability/Exploitation, Reverse Engineering

POSITIONS OF RESPONSIBILITY

- **Web Secretary — Aerospace Department, IIT Bombay** *Apr '18 - Mar '19*
 - Part of 13 member council committee working towards promoting the Aerospace culture in institute
 - Responsible for developing and maintaining council website written using **Django** , **HTML** , **CSS**
- **Member — Web and Coding Club** *Apr '18 - Mar '19*
 - Coordinated events of one of the largest clubs in India aimed at inspiring students to take up coding
 - Headed **Gsoc Incubation cell** and encouraged interested students to contribute to **opensource**
 - Conducted a Hackathon on game development using MIT Strach with over **250+** student participants
 - Organised a workshop on **Git & GitHub** for **50+** students & demonstrated the basics of version control
- **Events Coordinator — Entrepreneurship cell, IIT Bombay** *Apr '18 - Jan '19*
 - Worked at National Entrepreneurship Challenge to conduct **Nationwide competitions** to demystify the shroud of alienism that surrounds Innovation and Entrepreneurship
 - Attended entrepreneurial **conferences** for interacting with **50+ corporate heads** for networking
 - Contacted and collaborated with **60+** startups in IIT-B to establish a startup community
- **Cultural and Events Coordinator — Mood Indigo, IIT Bombay** *May '18 - Apr '19*
 - Invited **20 artists from 10 countries** to exhibit international performances at Mood Indigo
 - Led a team of 15+ organizers that executed events in **International Music Festival (IMF)**
 - Negotiated with renowned Indian artists & clubs in Mumbai to showcase **12 Concerts in IMF**

KEY COURSES UNDERTAKEN

- **Computer Science: Foundations of Network Security and Cryptography**, Computer Programming and Utilization, Digital Image Processing* , **Web Search and Mining***
- **Aerospace:** Aircraft Propulsion, Incompressible & Compressible Fluid Mechanics, Aerospace Structural Mechanics, Spaceflight Mechanics, Control Theory*, Aerodynamics*
- **Inter-disciplinary:** Introduction to Numerical Analysis, Linear Algebra, Calculus, Differential Equations, Quantum Physics and its Applications, Economics, sociology*

** to be completed by November 2019*

EXTRACURRICULAR ACTIVITIES

- **Volunteer at National Service Scheme (NSS)** *Apr '18 - Mar '19*
 - Spent **80+ hours** volunteering at NSS under the Educational Outreach subdivision
 - **Taught** basic Mathematics and English to kids from **ASHA Mumbai** NGO
- **Adventures** *Summer '18*
 - Successfully completed 15 day Mountaineering Adventure Camp, certified by JIMWS Sanasar
 - Learned rock climbing, rappelling, river crossing and Basic techniques of survival in various situation
 - Achieved the targeted height gaining **9,500 feet** at Shank Pal ridge, Jammu and Kashmir
- **Miscellaneous**
 - Mentored Three teams in EnB BuZZ, a B model competition which had **100+** teams participants
 - Mentored Three teams in Code Camp organised by codepromt, Internet Academy which had **130+** participants, students made an web app using **Flask**, **HTML**, **CSS**