

Tarun Kumar

Curriculum Vitae

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Third Year UG

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Education

2015–Present **Bachelor of Technology, Aerospace Engineering,**
Third Year UG, Indian Institute of Technology, Bombay, CGPA: 5.16

2013–2015 **Intermediate Examination,**
Srichaitanya Narayana Junior College, Hyderabad, Percentage: 96.1%

Research Interests

Cognitive Neuroscience

Executive Function

Game Development

Computational Fluid Dynamics

Projects and Internship

Nov'17– **Organization of Executive Function.**

Present Guide: Professor Neeta Kanekar, Department of Biosciences and Bioengineering
Conducted a detailed literature survey on Executive Function, specifically:

- Executive Function and its organization
- Neuropsychological tests and the nature examined
- Statistical Methods used to determine Executive Function organization

Dec '16 **Game Development Internship.**

GameEon Infotech Private Limited

- Designed and programmed a game using Unity3D Engine
- Scripted many aspects of game such as graphics animator and attacks
- Developed Code to enhance the mechanics and gameplay of new asset in Unity Engine
- Programmed additional functionality to asset used in Engine

Jan '17 – **Trajectory Simulation of THEMIS Spacecraft.**

Apr '17 Guide: Professor Ashok Joshi, Department of Aerospace Engineering

- Studied various forces acting on launch vehicle and modelled various stages of it
- Estimated its required change in fuel and burn profile if payload is changed
- finally modelled the satellites Trajectories around earth and moon

June '16– **Visualization of streamlines over a rotating cylinder.**

Dec '16 Guide: Professor Aniruddha Sinha, Department of Aerospace Engineering

- Developed an Algorithm in Python to solve the Potential Flow Equations for cylinder rotating at various speeds
- Visualized the Streamlines and Isopotential lines using python
- Used Potential Flow Equations to satisfy the given requirement and Boundary conditions

Jan '16– **Students Marks Distribution.**

Apr'16 Guide: Professor Prabhu Ramchandran, Department of Aerospace Engineering

- Used Python to analyse data of more than 1.8 lakh students marks
- Made use of various libraries like Pandas, Numpy and Matplotlib to plot various statistics of the data
- Graphically proved the equivalence of the exponential and normal distributions to the respective histogram plots, thus showing the accuracy rate of the survey

Technical skills

Languages	C/C# /C++, Python, Shell Scripting, HTML, CSS, \LaTeX
Software	Unity 3D, Neuron, MATLAB, AutoCAD, Solidworks
Platforms	Windows, Linux and its distributions

Notable Courses

Introduction to Biology, Introduction to Computational Neuroscience*, Movement in Health and Disease, Computer Programming and Utilization, Data Structures and Algorithms, Calculus, Linear Algebra, Differential Equations, Differential Equations 2, Data Analysis and Interpretation

*Online Course By university of Tartu,

Scholastic Achievements

- 2015 Secured 96.1 percentile in JEE Advanced among 1,25,000 aspirants
- 2015 Secured 99.07 percentile in JEE Mains competing with over 1.3 million candidates
- 2015 Secured 99.8 percentile in Engineering, Agriculture and Medical Common Entrance Test conducted by Jawaharlal Nehru Technological University
- 2015 Secured 99.92 percentile in State level entrance exam conducted by education board of Andhra Pradesh

Position of Responsibility

Aug '16– **Hostel Secretary.**

April '17 Social Secretary, Vikings Hostel 6, IIT Bombay

- Elected by an electorate of over 400+ students to represent the hostel in the IC Committee
- Planning and executing events in the hostel catering to 400 students
- Organized Kings night, a first of its kind event with help of other social secretaries

July'16– **Coordinator.**

Dec '16 Competitions and LYP, Mood Indigo

- Conceptualized and organized 6 Multicity Competitions pan India thus increasing outreach
- Negotiated deals with cultural institutes to provide the winners a platform to showcase their talent
- Revamped the governing rules and regulations of various competitions in genres
- Functioned as the first point of contact for the cultural head of several colleges

Sept '16 **Mentor.**

RC Plane Competition

- Mentored 3 teams of 4 members to develop a remote controlled planes to participate in institute level competitions conducted by aeromodelling club
- All the teams completed the given task under the required time

Extra Cirricular Activities

Cubing Second Youngest Cuber in India to official solve the Rubiks Cube blindfold

Hostel Integral part of Hostel Council, which won Institute Cultural Cup

Editing Lead editor of a short film which won first prize in freshman year competition

Cricket Member of cricket team which won institute level cricket Tournament