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B.Tech. Engineering Physics  
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Examination	University	Institute	Year	CPI
Graduation	IIT Bombay	IIT Bombay	2023	8.59

### SCHOLASTIC ACHIEVEMENTS

- **Top 25 all India:** INAO | **State top 1%:** NSEA | Invited to OCSC, the final trials for **India's delegation** to the International Olympiads
- One among the **73** undergraduates selected **nationwide** for NIUS (Physics) | Recipient of the **KVPY** fellowship – All India Rank **326**

### PROFESSIONAL EXPERIENCE

<b>Tata Industries Limited (TIL)</b> [Mar'23-Jun'23]	<b>Analyst Intern</b>   Technology Investment Strategy   New ventures arm of the Tata Group <i>Responsible for investment analysis and for creating plans &amp; conducting explorations in two deep-tech sectors</i> <ul style="list-style-type: none"><li>▪ Opportunity of up to <b>INR 20M+ revenue per year</b>: Developed a model for a Corporate Social Responsibility plan to generate additional channels of revenue for <b>farmer communities</b> in water-scarce regions of India</li><li>▪ Developed and shared insights into various ad-hoc techno-commercial opportunities that were presented to Tata Industries Limited (TIL) with a goal of enabling <b>senior management in decision making</b></li><li>▪ Subject matter specialist: Shared working and theoretical knowledge with <b>senior leadership</b> to aid the development of a roadmap for the exploration of quantum computing and related quantum technologies</li></ul>
<b>Co-Founder</b> [Feb'23-Aug'23]	<b>Agriphany</b>   <i>Secured a grant of INR 50K through IDEAS, IIT Bombay</i>   <i>Carbon Credits via Sustainable Farming</i> <ul style="list-style-type: none"><li>▪ Developed marker recognition ML algorithm for drones   92% accuracy despite vibration-induced blurry video</li><li>▪ Conceptualized a framework to generate agricultural carbon credits through negative emissions technologies</li></ul>
<b>Université Paris-Saclay</b> [May'22-Jul'22]	<b>Visiting Research Intern - Biophysics</b>   Paris, France (on-site)   Director Guillaume Tresset <i>Univ. ranked 1<sup>st</sup> in Europe and 13<sup>th</sup> globally in physics</i>   <i>Worked directly under a Director of Research at CNRS</i> <ul style="list-style-type: none"><li>▪ <b>Discovered</b> correlation in viral DNA content and light absorption using a <b>novel</b> analysis of 10.6k+ particles</li><li>▪ Performed <b>3 experiments</b> by rapidly mixing protein and RNA droplets under various ambient conditions</li><li>▪ <b>Modelled</b> icosahedral virus formation by <b>analysing</b> its kinetics data on MATLAB using Monte Carlo methods</li></ul>

### RESEARCH EXPERIENCE

<b>Bachelor's Thesis</b> Prof. A Kumar	<i>"Finding Zero-index Bound states in continuum by simulating photonic crystals"</i>   <i>Possibility of future publication</i> <ul style="list-style-type: none"><li>▪ <b>Discovered</b> parameters allowing <b>0% radiation losses</b> in a crystal   Fabricating the <b>metamaterial</b> at LOQM, IITB</li></ul>
<b>UMIC, IITB</b> ML Subdivision [Sep'19-Dec'20]	<i>Only freshman to singlehandedly manage an entire subsystem - a role usually reserved for 3<sup>rd</sup> year students</i> <ul style="list-style-type: none"><li>▪ <b>Reduced</b> code execution time by <b>45x</b> through a custom-built algorithm – attaining almost real time speeds</li><li>▪ Progress on <b>active research problems</b>: Developed DL code able to recognize 10-inch characters 80+ft away</li><li>▪ <b>International Competition</b>: Cleared primary and secondary rounds of the Barcelona Smart Drone Challenge</li></ul>
<b>MELODE Labs, IITB</b> Algorithms Division [Oct'21-Mar'22]	<i>Reservoir Training of Liquid State Machines (LSMs) using principles of Neuromorphic Computing &amp; Engineering</i> <ul style="list-style-type: none"><li>▪ <b>Novel idea</b>: Achieved <b>75% accuracy</b> in simulating a brain disorder by hypothesising the underlying mechanism</li><li>▪ Analysed the working of LSMs in MATLAB by <b>varying parameters</b> such as synapse order &amp; neuron quantity</li></ul>

### LEADERSHIP AND ORGANISATIONAL EXPERIENCE

<b>Head of Cabinets</b> [Feb'22-May'23]  Team Building  Policy Making  Initiatives	<b>Student Mentor Program</b>   Department & Academic Verticals   Supported <b>3.6k+ undergrads</b> <i>Recommended by Deans to lead a 3-tier, 340+ member team</i>   <i>Student Rep. (2/10k+) in IITB's ARP Committee</i> <ul style="list-style-type: none"><li>▪ Supervised <b>student heads</b> of all departments; vetted the selection of 316 student mentors from <b>760+ applicants</b></li><li>▪ Conceptualised a <b>3-stage</b> training for <b>440+ mentors</b>, executed in collaboration with <b>UK based</b> professionals</li><li>▪ Projected <b>15% reduction</b> of students in the Academic Rehabilitation Program by recommending <b>12 amendments</b></li><li>▪ Empowered <b>30%</b> of the populace - <b>low income/disabled</b> students - by proposing a Web Accessibility Policy</li><li>▪ Led <b>6 Institute councils</b> and pioneered 'Sophomore Immersion' for the offline onboarding of <b>1.3k+ students</b></li><li>▪ Acquainted <b>1.4k+ students</b> across <b>13 departments</b> with future opportunities by revamping 'Branch Induction'</li></ul>
<b>Coordinator, Aerove</b> [Dec'19-Jan'21]	<i>Impact: Reduced 40% of the cost per drone by identifying alternatives to cost drivers of expensive components</i> <ul style="list-style-type: none"><li>▪ Secured <b>INR 0.8 million</b> in funds for building autonomous drones through a proposal pitched to STPC, IRCC</li><li>▪ Designed the <b>7-day</b> recruit training program   Enabled <b>30/30 beginners</b> to build advanced ML code in 40 days</li></ul>
<b>Student Mentor</b> [May'21-Jul'22]	<i>Impact: Felicitated with the Special Recognition award (19/300+) in cognizance of extraordinary contribution</i> <ul style="list-style-type: none"><li>▪ Among the <b>13/550+</b> applicants chosen in 3<sup>rd</sup> year   Assisted <b>180+</b> students in career planning by organising talks</li></ul>
<b>Head TA</b> [Spring '22 & '23]	<i>In charge of a team of 35 teaching assistants</i>   <i>Conducted weekly tutorials &amp; quizzes</i>   <i>1<sup>st</sup> year Quantum Physics</i> <ul style="list-style-type: none"><li>▪ Aided <b>3000+</b> students by producing a <b>50-page booklet</b> with detailed answers to <b>110+</b> challenging problems</li></ul>

### EXTRACURRICULAR ACHIEVEMENTS

<b>Dance Tournaments</b>	▪ <b>Head Choreographer</b> of the institute dance team and won prizes at prestigious competitions <b>all over India</b>		
	<b>Trophies</b>	<b>Competitions</b>	<b>Significance</b>
	Winner	Group Dance: IIIT Hyderabad 2021	Beat <b>18 teams</b> across India
	2 <sup>nd</sup> place	Group Dance: IIT Madras 2023	Invited to <b>choreograph</b> for the judge
	2 <sup>nd</sup> place	Group Dance: IIM Calcutta 2020	Bested <b>professionally trained</b> teams
	2 <sup>nd</sup> place	Group Dance: Inter IIT 2019	<b>One of only 4</b> freshmen to clear trials
	Finalist (3 occasions)	Street Battles, Group Dance - Moodl '20, '22	Knocked out <b>3x defending champions</b>
<b>IBM Hackathon</b>	▪ <b>2<sup>nd</sup> place</b> : developed a twitter monitoring <b>AI tool</b>   Created a pitch <b>on the spot</b> after a last-minute pivot		