**Raj Viren Lakhani** | **170040009**
**Mechanical Engineering** | **B.Tech.**
**Indian Institute of Technology, Bombay** | **Gender: Male**
**DOB: 17-08-1999**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Graduation | IIT Bombay | IIT Bombay | 2021 | |

## SCHOLASTIC ACHIEVEMENTS

- **Ranked 4th** among 125 B.Tech. students in the Mechanical Department and awardee of **Institute Academic Prize** ['20]
- Awarded **AP grade** for outstanding performance in Fluid Mechanics **(1/153)** and Heat Transfer **(2/153)** courses ['19]
- Selected as an Undergraduate **Teaching Assistant** for first year Physics and Chemistry courses ['19]

## INTERNSHIPS

**Lear Corporation** | Engineering Intern | India Engineering Centre (IEC) Seating, Pune [Apr '20-Jun '20]

*Honoured with **Lear Spotlight Award** and Letter of Recommendation for potential tool cost and rework time savings*

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| ***Approach*** | • Conducted a study of **20+** seating jargons & **80+** design checks across Comfort, Legal & Packaging domains<br>• Categorised specifications as OK, NOK or NA after scrutinizing **45+** drawings; raised **25+** design deviations |
| ***Results*** | • Reported legal and comfort compliance for the **upcoming** Jaguar Land Rover (JLR) model using **CATIA** V5<br>• Delivered 5 RMDV reports for **right-first-time** line operations and safety checks as per OEM regulations |

**University of Colorado, Boulder** | Student Intern | Guide: Prof. Kenneth Jansen [May '19-Jul '19]

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| ***Approach*** | • Retrieved velocity profile data and plots from **80 locations** on the DLR-F6 wing-body model using Paraview<br>• Collated computational Pressure Coefficient ($C_p$) data for **14 cross-sections** on nose, fuselage, and wing |
| ***Results*** | • Contrasted **CFD** simulation results with NASA's measurements averaged over **8** experimental **runs**<br>• Computed 3 Boundary Layer (BL) parameters with an **accuracy** of **97.6%** resembling experimental studies |

## POSITIONS OF RESPONSIBILITY

**Department Research Coordinator** | Undergraduate Academic Council [Apr '19-Jun '20]

*Honoured with **Department Special Mention award** for a tenure impacting **4000+** students and **200+** stakeholders*

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| ***Highlights*** | • Developed **60+** research engagements for **450+** students through 3 centralized research project programs<br>• Increased opportunities by **200% Y-o-Y**; gauged progress through bidirectional student-faculty feedback |
| ***Initiatives*** | • Partnered with Research Park to promote industry-academia collaboration in a flagship event - **ResearchX**<br>• Pioneered **'Grad School 101'** with insights into application & admission process abroad for **40+ aspirants** |

**Institute Student Mentor (ISMP)** and **Department Academic Mentor (D-AMP)** [Jun '20-Present]

***One of 108** mentors selected out of **300 applicants** based on interviews, **peer reviews**, SOP, and overall performance*

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| ***Highlights*** | • Selected to assist freshmen for their smooth transition to campus life and co-curricular endeavours<br>• Mentoring and guiding **6** sophomore students in their academic issues and extra-curricular pursuits |
| ***Initiative*** | • Launched D-AMP Blog built with a **team of 13**; **250+** daily hits and projected readership of **500+** students |

## PUBLICATION

"*Hybrid Turbulence Model Computations of the NASA Juncture Flow Model Using PHASTA*" presented at the American Institute of Aeronautics and Astronautics **SciTech Expo** 2020; **272 reads** and of **99%** relatively higher research interest

## KEY PROJECTS

**Tracking microbubbles in Bifurcating microchannels**| Guide: Prof. Janani Murallidharan [Sep '19-Present]

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| ***Approach*** | • Prototyped Y-shaped microchannel (100μm diameter) using PDMS **soft-lithography** technique on Si wafer<br>• Induced microbubble flow using different **flow rate ratios** of continuous (water) and dispersed phase (air) |
| ***Relevance*** | • Extrapolating the study for potential **medical applications**: Tracking embolus through capillary networks |

**Creep Deformation** | Course: Solid Mechanics | Guide: Prof. Parag Tandaiya [Mar '19-Apr '19]

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| ***Approach*** | • Examined uniaxial loading effect on creep deformation of solder wire at room temperature in a team of 4<br>• Established a robust experimental setup to measure **strain v/s time** in a wire under **3** different **weights** |
| ***Results*** | • Verified power law relationship (**$R^2$=0.99**) using **120** recorded values and calculated avg. stress exponent |

## EXTRA CURRICULAR ACTIVITIES

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| ***Cultural*** | • Awarded hostel **Cultural Special Mention** for remarkable contribution to dance & theatre activities | ['19] |
| | • Part of choir performance on 56th Convocation before **2000+** audience and **Hon'ble PM Narendra Modi** | ['18] |
| | • Secured **5th** position in **interhostel** Dance Championship; performed in a dance troupe of **17** | ['18] |
| ***Social*** | • Volunteered for Abhyuday's Annual Social Festival at IIT Bombay to facilitate **NGO networking** | ['18] |
| | • Established **Guinness World Record** through solar energy awareness campaign at Techfest, IIT-B | ['18] |
| ***Miscellaneous*** | • **Led** a **team of 3** to devise a market growth strategy for MX short-video platform post TikTok ban | ['20] |
| | • Authored an article in the first ever UG Research 101 booklet with over **2.5k** downloads | ['20] |
| | • Spearheaded a four-tier council as **Head Boy**; bagged **overall runner-up trophy** as a House Captain | ['15] |

*Scholastic achievements and extracurricular activities are not verified by the Placement Cell*