



Krishi Mantri  
Chemical Engineering  
Indian Institute of Technology Bombay

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B.Tech.  
Gender: Male  
DOB: 22-12-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	

#### SCHOLASTIC ACHIEVEMENTS

- Awarded **Undergraduate Research Award** for significant practical research accomplishments in Proteomics lab [‘21]
- Ranked 4** in the batch out of 137 and awarded **AP grades** (1 out of 137) in **Fluid Mechanics and Thermodynamics I** [‘21]

#### PUBLICATIONS

- A Mukherjee, A Verma, S Bihani, A Burli, **K Mantri**, S Shrivastava. “Proteomic advances towards developing SARS-COV-2 therapeutics using in silico drug repurposing approaches”; **Drug Discovery Today: Technologies**, 2021

#### POSITIONS OF RESPONSIBILITY

**Institute Secretary Academic Affairs** | *Head- EnPoWER, UG Academic Council, IIT Bombay* [May’21-Present]

*Highest Nominated Student officer | Responsible for improving academic policies and leading a team of 4 to promote research*

Initiatives	<ul style="list-style-type: none"><li>Pioneered sophomore induction series in <b>13 branches</b> familiarizing <b>1400 students</b> to core opportunities</li><li>Conceptualizing <b>GRAD Booklet</b>- one stop higher studies guide with university specific application insights</li><li>Organized <b>SURP 2021- 167</b> research projects (<b>100%</b> yoy increase); <b>60+</b> faculty guides; <b>500+</b> participants</li></ul>
Management	<ul style="list-style-type: none"><li>Conducted focused surveys and analyzing responses of <b>4500+ students</b> for <b>UG Curriculum Review</b></li><li>Structured an official interim report for establishment of <b>Student Grievance Redressal Committee</b></li><li>Devised the awareness campaign for the upcoming <b>Koita Centre for Digital Healthcare</b>, IIT Bombay</li></ul>

**Department Academic Mentor** | *Student Mentorship Program, IIT Bombay* [May’21-Present]

*Selected out of 80 applicants in a team of 30 members for student mentorship program to build a support system for 160+ students*

- Mentoring **4 second-year** chemical engineering students catering to their academic needs and co-curricular endeavors
- Co-authored** internship blog and extensive **course reviews** for DAMP blog, Department of Chemical Engineering

**Institute Academic Coordinator** | *EnPoWER, Undergraduate Academic Council, IIT Bombay* [Jun’20-Mar’21]

*Selected among 12 coordinators out of 120+ applicants; undertook various initiatives to promote engineering-oriented research*

- Pioneered virtual research symposium in collaboration with **NTU, Singapore** with **60+** participants in **7 engineering fields**
- Conducted **ENTHUSE**, the first-year research orientation with a panel of **16** IIT Bombay professors and **750+** attendees

#### WORK EXPERIENCE

**Process Modelling Intern, PMET Division** | *Pfizer Inc. Worldwide R&D* [Jun’21-Aug’21]

*The internship aimed to optimize various unit operations in Pfizer’s novel drug making process using computational techniques*

- Modelled** bead congealing dynamics for novel pharmaceutical unit operation using analytical and numerical methods
- Constructed **perturbation technique model** to solve PDEs and mapped the position of solid-liquid boundary and temperatures
- Improved modelling accessibility** of PMET team by setting up simulations on multiple open-source software platforms

**Co-Founder** | *RishVen Biosolutions | Registered Student Startup* [Apr’20 - Present]

*RishVen Biosolutions is a startup with a goal to address the needs of effective hygiene products and sustainable agricultural products*

- Pioneered disinfectants with hypochlorous acid and commercialised **6 hospital and industrial grade disinfectant products**
- Formulated **4** amino acid rich yield development products and executed extensive trials in **200+ acres** farm on **7+ crops**

#### KEY PROJECTS

**Proteomics driven drug repurposing for COVID-19** | *Guide: Prof. Sanjeeva Shrivastava, IIT Bombay* [Sep’20-Apr’21]

*The project aimed to investigate re-purposed drugs as a treatment alternative for COVID-19 using computational techniques*

- Co-authored **3 research manuscripts** published in international and national journals for proteomics and drug discovery
- Utilised **python** to optimise the molecular docking software pipeline; **quadrupled** process speed; reported **5 potential drugs**

**Imperial College- Glioblastoma Cell Project** | *Proteomics Lab, IIT Bombay* [Apr’21-Present]

- Worked in collaboration with researchers at **Imperial College, London** to find novel therapeutics for Glioblastoma
- Performed **statistical analysis** on LC-MS data of 4 GBM cell lines and found **10+** differentially expressed protein as drug targets

**Fermentation for fish meal replacer** | *RnD Division, Abhay Nutrition Pvt. Ltd.* [May’19-Jul’19]

*The project aimed to substitute higher cost animal protein sources in fish feed by alternative sustainable plant proteins*

- Implemented solid-state fermentation on **5 oilseed meals** to reduce anti-nutritional factors by **80%** and enhanced digestibility
- Scaled up the process to a batch of **1 ton per day** from 10kg, modifying and utilizing the **80%** existing plant machineries

#### CO-CURRICULAR ACTIVITIES

Debating	<ul style="list-style-type: none"><li><b>Semifinalist</b> (novice) at UNSW International Debate Championship, Indonesia; total participation of <b>84 teams</b></li><li>Part of the <b>winning inter-IIT debating contingent</b>; represented IIT Bombay in <b>5 national level</b> debate tournaments</li></ul>
Miscellaneous	<ul style="list-style-type: none"><li>Served as a <b>UG Teaching assistant</b> for biology and quantum chemistry courses guiding <b>30</b> first-year students</li><li>Awarded <b>first prize</b> in business model cum pitching competition for the idea of plant-based meat substitutes</li></ul>