Tushar Verma

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Education

Year	Qualification	School/Institution	CPI/%
2022-Present	B.Tech	Indian Institute of Technology Kanpur	7.5/10
2022	CBSE XII	Satluj Public School, Sirsa, Haryana	93%
2020	CBSE X	Satluj Public School, Sirsa, Haryana	94%

Scholastic Achievements

- Awarded the **Merit-cum-Means Scholarship** by **IIT Kanpur** annually since **2023**, given to the **top 1%** meritorious students.
- Secured **All India Rank 3985** in **JEE Main 2022** conducted by National Testing Agency, amongst **1.5M** appeared participants.
- Secured **All India Rank 7673** in **JEE Advanced 2022** conducted by IIT Bombay, amongst **0.5M** shortlisted candidates.
- Received **Silver Honor** (**Top 7%**) in the **International Youth Math Challenge 2020** among **6,500+** global participants.

Work Experience

Product and Strategy Intern *Aug'24 - May'25*
HealthQuant Pvt. Ltd. | Startup, IIT Kanpur

- Contributed to **successful fundraising** exceeding **INR 20L** by preparing **investor pitch decks** and **market-facing materials** for stakeholder engagement.
- Collaborated with **co-founders** to refine **business strategy**, driving **investor outreach** for sustainable growth.
- Designed **UI prototypes** and **digital assets** that increased pre-launch **client engagement** by over **30%**, supporting strategy for upcoming **product launches**.
- Supported establishing **key strategic connections** with the **Ex-Head of Abbott India**, now serving as an **advisor** and on the **Cap Table**.

Key Projects

Lexora: Legal Advice Platform *Jun'25 - ongoing*
Self Project | IIT Kanpur

- Developed *Lexora*, a **Flutter cross-platform** mobile platform for legal advice, featuring a **real-time community** feed and **E2E encrypted** chats to drive user interaction.
- Engineered the **Firebase** backend, integrating **Firestore** for the database, **Authentication** for security, and **Firebase Analytics** to capture and model user engagement metrics.
- Built the core community feed with an **upvote/downvote system** and **threaded replies**, enabling the **in-depth analysis of user behavior** and emerging content performance trends.
- Managed the **end-to-end** app's release cycle on the **Google Play Store**, utilizing **closed testing** to analyze **performance data** and crash reports before a full public launch.

Visual Data Forecaster *Aug'25 - ongoing*
Self Project | Dashboard

- Developed a dynamic and **interactive web application** using **vanilla JavaScript**, HTML5, and CSS3 to perform **time-series analysis** and **visualize predictive trends** for users.
- Implemented multiple **statistical forecasting models**, including **Linear Regression**, **Polynomial Regression**, and **Double Exponential Smoothing**, to ensure analytical versatility.
- Engineered an intuitive and **fully responsive user interface** with **Tailwind CSS**, featuring an interactive **data exploration dashboard** and charts rendered by **Chart.js**.
- Integrated advanced features for **automated model insights** and **statistical confidence interval** calculation to enhance **critical** data-driven decision-making and forecast reliability.

Computer Graphics Project *Aug'25 - ongoing*
Self Project | IIT Kanpur

- Engineered a dynamic **2D animated scene** from scratch using **WebGL** and **JavaScript**, implementing **linear algebra** concepts like **affine transformations** for object kinematics.
- Architected the renderer with **modular JavaScript functions** for **three distinct rendering modes** (Solid, Wireframe, Point), ensuring code reusability and maintainability.
- Designed **scalable architecture** prepared for future enhancements, including **3D scene transitions**, dynamic **lighting models**, and interactive **camera controls**.

Neutron Transport Modeling *May'25 - Jun'25*
Self Project | NETP Lab, IIT Kanpur

- Developed a **Monte Carlo simulation** from scratch in **MATLAB**, implementing **stochastic model** to simulate **neutron transport** and particle interactions within a moderating medium.
- Built a **data pipeline** to process and integrate **large-scale ENDF** & **JANIS** cross-section data, enabling a **quantitative comparison** of H_2O and D_2O moderator effectiveness.
- Calculated and visualized **spatial neutron flux** distributions for **4 source geometries**, graphically validating **statistically significant** differences in moderation properties of heavy water.
- Performed **rigorous statistical analysis** on simulated particle tracks to derive key reactor physics parameters, achieving **>98% model validation accuracy** against **MCNP** benchmark.

Machine Learning with Python *Dec'23 - Jan'24*
Chemineers Society | IIT Kanpur

- Built a **logistic regression model** from scratch, boosting **prediction accuracy** with careful **hyperparameter tuning**.
- Applied essential **machine learning** techniques, including **rigorous data preprocessing** and **L2 regularization**, for improved model performance and **robust predictive accuracy**.
- Applied **K-Nearest Neighbors (KNN)** and **decision trees** to **real-world** datasets, enhancing **classification** skills.

Graphics and Shaders: 3D Renderer *Jun'23 - Aug'23*
Game Development Club | IIT Kanpur

- Worked with a team of 7 fellow-mates and 2 mentors to develop a **3D renderer** using **computer graphics** and **shaders**.
- Gained hands-on experience with **C++**, **C**, **CMake** for **cross-platform build automation**, and **OpenGL**.
- Implemented a **custom fragment shader** that enhanced **visual quality** and optimized the **real-time rendering pipeline**.

Key Skills

- **Programming:** Python, R, SQL, Js, Dart, MATLAB, Git
- **Libraries:** TensorFlow, Scikit-learn, NumPy, Matplotlib, Manim
- **Technical:** Jupyter, Origin, MS Excel, Google Cloud Platform

Position of Responsibility

Member, Finance Committee *Aug'24 - Apr'25*

- Elected by **75+** Senate panel to the **4-member** Gymkhana F.C.
- Managed an **INR 2Cr+** budget and revised financial policies, achieving a **50% reduction** in unnecessary expenditures.

Relevant Courses

**ongoing, **online*

- Process Control & Dynamics
- Transport Phenomenon
- Chem. Process Syn. & Des.
- Capstone Project*
- Manuf. Energy Systems*
- Neutron Activation Analysis**
- Differential Equations
- Linear Algebra