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| **EDUCATIONAL QUALIFICATIONS** | | | | | | | | | | |
| **Year** | **Qualification** | | | | **Institute** | | | | **Performance** | |
| 2021-2025 | B.Tech - Mechanical Engineering | Minor – Eng Literature | | | | Indian Institute of Technology Kanpur | | | | **8.0/10.0** | |
| 2021 | Class XII, Maharashtra State Board | | | | Pace Junior Science College, Nerul | | | | **95.2%** | |
| 2019 | Class X, CBSE Board | | | | D.A.V Public School, Nerul | | | | **94.0%** | |
| **ACHIEVEMENTS** | | | | | | | | | | |
| * Secured **All India Rank 2666** in JEE Advanced 2021 and **All India Rank 5044** in JEE Mains 2021 amongst **9.2** **lakh candidates** *2021* * Secured **All India Rank 102** in All India Open Mathematics Scholarship Examination by IPM among **50K+** **candidates**  *2020* | | | | | | | | | | |
| **WORK EXPERIENCE** | | | | | | | | | | |
| **Product Development Internship | *Medantrik* *(MedTech Start-Up)*** | | | | | | | *May’24-Jul’24* | | | |
| *Received Pre-Placement Offer (PPO) for exceptional performance* | | | | | | |  | | | |
| *Objective* | * Develop algorithm for **portable lung health device**, cost-effective spirometry test and lung exercises**(₹6K vs.₹2K/hospital test)** | | | | | | | | | |
| *Strategy* | * Calibrated device to map RPM to breath flow rate using prototype at **National Wind Tunnel IITK**, informed **5+research papers** * Built a hospital prototype and interface, collecting **10+ datapoints** from **200+ patients**, boosting algorithm **accuracy by 12%** * Integrated hospital data **(SQL Server)** with GLI metrics, applying **RandomForest** to predict ideal lung health parameters * Oversaw marketing and design for health camps with **1K+ footfall** and **represented team** for **ASEAN-India ScaleHub 2024, Bali** | | | | | | | | | |
| *Impact* | * Co-invented patent-pending device and algo, **launching in Delhi-NCR**(Sept); projected sales of **50K units**; **₹30cr revenue** by Apr * Classified lung health into **4 categories** with **96% accuracy**; lung health report with **19 parameters/4 graphs** via **in-house algo** | | | | | | | | | |
| **KEY PROJECT** | | | | | | | | | | |
| **Yoga Pose Prediction and Feedback Generation | *Dr. Tushar Sandhan, EE, IIT Kanpur*** | | | | | | | *Jan’24-May’24* | | | |
| *Objective* | * Enhance self-guided yoga practice with a **deep learning model**, classifying yoga asanas and providing **real-time feedback** | | | | | | | | | |
| *Strategy* | * Engineered hybrid **CNN-LSTM model** capturing spatial and temporal features, trained on **88 videos** from diverse datasets * Utilized **OpenCV** for video processing, **MediaPipe** for pose landmark extraction, **Keras with TensorFlow** for model training * Conducted **angular vector analyses** to compare user poses with ideal poses, and implemented a feedback mechanism | | | | | | | | | |
| *Result* | * Reached **99.05%** accuracy, boosted to **99.66%** with polling, classifying videos into **6 asanas** and providing **effective feedback** | | | | | | | | | |
| **Forecasting using time-series Analysis | *Stamatics, IIT Kanpur*** *May’23-Jul’23* | | | | | | | | | | |
| *Objective* | * Develop and compare predictive models for **air quality and stock prices** using time-series analysis to optimize accuracy | | | | | | | | | |
| *Strategy* | * Applied **ADF, ACF test, Box-Cox transformation** for the stationarity, normality, homoscedasticity on **7+time series** datasets * Decomposed a time-series into its trend, seasonality, cyclicity using **HP filter** and tested stationarity using **ADF statistical test** * Conducted statistical normality tests and utilized **ACF and PACF** analysis to determine order of **AR and MA models** | | | | | | | | | |
| *Result* | * Achieved a **MAPE of 0.0153** and **98.5% accuracy** in predicting Apple INC. stock prices using **Auto ARIMA** on **1405 observations** * Reduces prediction errors with **ARIMA, SARIMAX models**, achieving **97.1% accuracy** in Beijing air quality forecasting | | | | | | | | | |
| **Image processing *(Course Project)* | *Dr. Tushar Sandhan, EE, IIT Kanpur*** *Aug’23 – Nov’23* | | | | | | | | | | |
| *Objective* | * Solve **6 problem statements** and execute algorithms using **Numpy** and **OpenCV library**, with the help of reference papers | | | | | | | | | |
| *Strategy* | * Wrote algorithm for **jointbilateralfilter** using reference paper and **5+ research papers** for flash/no-flash image pair dataset * Implemented edge detection using **Canny Edge** and **Hough Transform**, and **executed** segmentation with **4+ algorithms** * Applied masking, non-linear and spatial filters; executed contour detection, compression and multi-resolution image denoising | | | | | | | | | |
| *Result* | * Executed **10+ image processing algorithm** with average accuracy over **86%** and received an **A grade** | | | | | | | | | |
| **Companion Arbiter PUF *(Course Project)* | *Dr. Purushottam Kar, CSE, IIT Kanpur***  *Jan’24 – May’24* | | | | | | | | | | |
| *Objective* | * Develop a linear model to predict PUF responses, optimizing code for hyperparameter impact on training and accuracy | | | | | | | | | |
| *Strategy* | * Mapped **32-bit challenge** vectors to **528-dimensional** feature vectors using custom transformations and Khatri-Rao product * Developed and tested **Logistic Regression, LinearSVC** on 50,000 CRPs using **Python and Scikit-learn** for high accuracy | | | | | | | | | |
| *Result* | * Achieved up to **99.33% accuracy** with LinearSVC and **99.22% accuracy** with Logistic Regression | | | | | | | | | |
| **Chat With Multiple-PDFs *(Self Project)*** *Aug’24* | | | | | | | | | | |
| *Objective* | * Develop **contextually responsive** **chatbot** to answer user queries, extracting and processing text from **multiple PDFs** | | | | | | | | | |
| *Strategy* | * Leveraged **PyPDF2, LangChain, FAISS** for text extraction, embedding, and retrieval, with **OpenAI and Hugging Face models** * Designed an **interface** with **Streamlit** to support file uploads, handle user queries, and responses generated by the chatbot | | | | | | | | | |
| *Result* | * Achieved a **90% accuracy** rate in query responses across PDF document types, processing up to **200 pages per document** | | | | | | | | | |
| **LEADERSHIP EXPERIENCE** | | | | | | | | | | |
| **Coordinator, Dance Club (KOS) | *IIT Kanpur*** *May’23 – May’24* | | | | | | | | | | |
| *Felicitated with Certificate of Appreciation by the* ***Director, IIT-K*** *for recognition as Coordinator, Dance Club, IIT Kanpur* | | | | | | | | | | |
| *Leadership* | * Directed a **3-tier team of 50+** in **4 national-level competitions** and coordinated **7 campus events** with **2K+ average footfall** * Managed club finances of **INR 1.2L** and generated over **INR 30K** in additional revenue by organizing diverse workshops | | | | | | | | | |
| *Initiatives* | * Organized a **7-day Summer Workshop** by tier-1 artist separately in two shifts for **50+ beginners** and **30+ team members** * Collaborated with Antaragni on a climate awareness campaign, reaching an audience of **1K+** in Kanpur’s biggest mall | | | | | | | | | |
| *Impact* | * Achieved a **historic milestone** by becoming the **1st dance team** from any IIT to qualify for **Indian HipHop Championship finals** * Garnered over **12 million+ views** and amassed an impressive **40K+ subscriber** base on the official Dance Club, IITK **YT channel** | | | | | | | | | |
| **RELEVANT COURSES** | | | | | | | | | | |
| Image processing | | Marketing Management | | | | Integrated Product Development - I *(ongoing)* | | | | |
| Introduction to Machine Learning | | Linear Algebra and ODE | | | | Partial Differential Equations | | | | |
| **TECHNICAL SKILLS** | | | | | | | | | | |
| • **Programming Languages**: C++, Python, HTML, CSS, LaTeX, SQL  • **Software & Utilities**: Fusion360, Adobe Illustrator, Adobe Photoshop, Adobe LightRoom, Microsoft Excel, Canva | | | | * **Data Science & ML**: TensorFlow, Keras, NumPy, Pandas, Matplotlib, Scikit-learn, Statsmodels, OpenCV, LangChain, Streamlit | | | | | | |
| **EXTRA-CURRICULAR ACTIVITIES** | | | | | | | | | | |
| **Category** | **Competition** | | **Achievements** | | | | | **Level** | | **Year** |
| *Performing Arts:*  *Dance* | **Inter-IIT Cultural Meet** | | *Led the contingent which secured,*   * **3rd position** in dance battle category at IIT Madras * **3rd position** in group dance category at IIT Madras | | | | | **Inter-IIT** | | *2023* |
| **Antaragni, IIT Kanpur** | | * **2nd position** out of **30+** teams in group dance category * **2nd position** out of **30+** teams in dance drama category | | | | | **National** | | *2023* |
| **Antaragni, IIT Kanpur** | | * **1st position** out of **30+** teams in group dance category * **1st position** out of **30+** teams in dance drama category * **3rd position** out of **10+** teams in dance battle category | | | | | **National** | | *2022* |
| **Thomso, IIT Roorkee** | | * **3rd position** out of **30+** teams in dance drama category | | | | | **National** | | *2022* |
| *Social Work* | • Tutored **20 underprivileged children** in Math and English of class 5th and 6th through **Prayas, IITK**   * Mobilized funds to support children's education at **Muskurahat Foundation (NGO)** earning a **merit certificate** | | | | | | | | | *2022* |
| *Networking* | • Campus Ambassador at **Acmegrade*(E-Learning platform)****:* Led **6+ successful campaigns**, gaining **100+ clients** | | | | | | | | | *2022-23* |
| *Managerial* | • **Senior Executive (Hospitality), Techkriti** - Lead a team of **50+ Junior Executives** and conducted exuberant events   * **Secretary, Dance Club**: Choreographed dance sequence for **35 freshers** and managed **80+ performances** at DE’23 | | | | | | | | | *2022* |