Kaustav Dasgupta 🔀 kaustavd21@iitk.ac.in | 📞 +91-9892139344 | 🦙 Kaustav Dasgupta **EDUCATIONAL QUALIFICATIONS** Year Qualification Institute **Performance** Indian Institute of Technology Kanpur 2021-2025 B.Tech - Mechanical Engineering | Minor – English Literature 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% SCHOLASTIC 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 Received the Academic Excellence Award for exceptional academic performance in the 2020-21 academic session 2021 **WORK EXPERIENCE**

Product Development Internship | *Medantrik (MedTech Start-Up)*

Jun'24-Aug'24

Received Pre-Placement Offer (PPO) for exceptional performance

• Develop algorithm for portable lung health device, a cost-effective personalized appliance for managing respiratory diseases • Calibrated device to map RPM to breath flow rate using prototype at National Wind Tunnel IITK; leveraged 5+ research papers Execution • Boosted algorithm accuracy by 12% by building hospital prototype and interface, collecting 10+ datapoints from 200+ patients • Integrated hospital data (SQL Server) with GLI metrics, applying Random Forest to predict ideal lung health parameters Co-invented patent-pending device; projected sales of ₹30cr revenue (50K units) by Apr, launch expected by Sept (Delhi-NCR) **Impact** • Generated lung report (19 parameters+4 graphs) via proprietary algo, classifying lung health into 4 categories (96% accuracy)

Product Management Internship | Foruppo (Autonomous Start-Up Ecosystem)

Wizoona (Co-creator) Product 2: **Urrban Tailor**

- Pioneered India's 1st community-led holistic education startup to empower young adults with comprehensive life education • Crafted value proposition, customer segmentation, GTM strategy of 'Wizoona' ensuring customer acquisition and retention
- Spearheaded 8-member team to develop Urrban Tailor, a personalized outfit selector, from concept to Product Hunt launch • Developed a dynamic selection framework across 5 dimensions on WordPress, enhancing user interaction and personalization

RELEVANT PROJECTS

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 • 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 Strateav • Conducted angular vector analyses to compare user poses with ideal poses, and implemented a feedback mechanism

• Reached 99.05% accuracy, boosted to 99.66% with polling, classifying videos into 6 asanas and providing effective feedback Outcome

Forecasting using time-series Analysis | Stamatics, IIT Kanpur

Objective Develop and compare predictive models for air quality and stock prices using time-series analysis to optimize accuracy Applied ADF, ACF test, Box-Cox transformation for the stationarity, normality, homoscedasticity on 7+time series datasets Strategy • Decomposed time-series into trend, seasonality, cyclicity using HP filter; analyzed AR/MA orders using PACF, normality tests • Achieved a MAPE of 0.0153 and 98.5% accuracy in predicting Apple INC. stock prices using Auto ARIMA on 1405 observations Outcome • Reduces prediction errors with ARIMA, SARIMAX models, achieving 97.1% accuracy in Beijing air quality forecasting

Introduction to Machine Learning | Dr. Purushottam Kar | CSE, IIT Kanpur | Course Project 💽 • Derived a linear mathematical simplification modeling a XORRO PUF with 8 multiplexers, using Khatri-Rao product XORRO

Developed a linear ensemble model built from SVC and logistic regression methods, achieving highest accuracy of 99.33%

• Implemented information-theoretic algorithms greedily maximizing the number of nodes, resulting in entropy reduction Hangman • Trained a 100% accurate decision tree model on a dictionary with 6K+ data points, effectively simulating Hangman gameplay • Developed a ridge linear model calibrating the voltages recorded by the ozone and nitrogen dioxide sensors accurately Sensor • Reduced the MAE by using **Kernel Ridge non-linear model** with an adaptive learning rate & ε -insensitive loss function

Chat With Multiple-PDFs | Self Project Aug'24 • Develop contextually responsive chatbot to answer user queries, extracting and processing text from multiple PDFs Objective • Leveraged PyPDF2, LangChain, FAISS for text extraction, embedding, and retrieval, with OpenAI and Hugging Face models Strateav

• Designed an interface with Streamlit to support file uploads, handle user queries, and responses generated by the chatbot • Achieved a 90% accuracy rate in query responses across PDF document types, processing up to 200 pages per document

Directed a 3-tier team of 50+ in 4 national-level competitions and coordinated 7 campus events with 2K+ average footfall

LEADERSHIP EXPERIENCE

Outcome

Coordinator, Dance Club (KOS) | IIT Kanpur

May'23 – May'24

2023

Felicitated with Certificate of Appreciation by the Director, IIT-K for recognition as Coordinator, Dance Club, IIT Kanpur

Leadership · Managed club finances of INR 1.2L and generated over INR 30K in additional revenue by organizing diverse workshops • Organized a 7-day Summer Workshop series by tier-1 artist separately in two shifts for 50+ beginners and 30+ team members *Initiatives* Crafted a dynamic 10-minute showcase at the PG Orientation that successfully drew 1.8x more PG students in the club Achieved a historic milestone by becoming the 1st dance team from any IIT to qualify for Indian HipHop Championship finals **Impact** • Garnered over 12 million+ views and amassed an impressive 40K+ subscriber base on the official Dance Club, IITK YT channel

TECHNICAL SKILLS

- Programming Languages: C++, Python, HTML, CSS, LaTeX, SQL
- Software & Utilities: Illustrator, Photoshop, LightRoom, Excel, Canva
- Data Science & ML: TensorFlow, Keras, NumPy, Pandas, Matplotlib, Scikit-learn, Statsmodels, OpenCV, LangChain, Streamlit

EXTRA-CURRICULAR ACTIVITIES Inter-IIT Cult Meet 5.0 • 3rd position in group dance category and 3rd position in dance battle among 20+ teams Performing Arts

• 1st position in group dance category and 1st position in dance battle among 30+ teams 2023 • Tutored 20 underprivileged children in Math and English of class 5th and 6th through Prayas, IITK Social Work 2022 Mobilized funds to support children's education at Muskurahat Foundation (NGO) earning a merit certificate