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Specialization: Computer Integrated Manufacturing

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Dual Degree (B.Tech. + M.Tech.)
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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	

MASTER'S THESIS

NLP in Artificial Intelligence Endeavour

AbstractAI: Automatic Scientific Paper Abstract Generator | *Guide: Professor Asim Tewari* [Jun'23 - Present]
Pioneering an advanced and sophisticated formal abstract writer for scientific research papers which utilizes power of LLM

- Web scraped **10,000+ diverse scientific papers** from Scopus and Arxiv websites for a robust abstract generation system
- Fine-tuning with LLM models, **Llama v2** and **Falcon1** along with the **7B+** parameters for precise scientific paper abstract
- Utilizing **Reinforcement Learning** along with human feedback during model training to achieve significant enhancement

KEY PROJECTS

Predictive Maintenance

Aircraft Engine Health Prognosis | *Course Project Guide: Professor Soham Mujumdar* [Jan'22 - Apr'22]
Developed specialized model incorporating innovative machine learning algorithm to ensure utmost aircraft engine safety

- Implemented feature engineering on the **NASA turbofan** dataset to analyze the **second degree polynomial interactions**
- Accomplished **0.81** of **R-square** score using **random forest regression** and tuned **hyper-parameter** on validation dataset

Agrotech Solution

Crop Recommendation System For Farmers | *Course Project Guide: Professor Asim Tewari* [Aug'22 - Nov'22]
Devised and Engineered a machine learning system for personalized crop suggestions according to the soil characteristics

- Applied various classification algorithms such as Gaussian Naive Bayes, **K-nearest neighbour**, & **support vector machine**
- Achieved an impressive **testing accuracy** of **99.3%** employed **Gaussian Naive Bayes**, emphasizing the model's resilience

Materials Research

Polymeric Biomaterial Development | *Course Project Guide: Professor Alankar Alankar* [Jan'23 - Apr'23]
Constructed a precise regression framework that accurately anticipates the Reaction Extent (RAE) for GOx-polymer hybrids

- Attained satisfactory R2 score of **0.63** by diligently performing **5-fold cross-validation** on the k-nearest neighbour model
- Leveraged **SHAP**(Shapley Additive Explanations) for enhanced feature importance to improve the model interpretability

Design of Experiments

Ultrasonic Machining of Glass Material | *Course Project Guide: Professor Soham Mujumdar* [Jan'23 - Apr'23]
Enhanced machining precision through-hole formation in non-conductive materials using ultrasonic machining techniques

- Improved manufacturing process by using **ANOVA** (Analysis of variance) on categorical variables in ultrasonic machining
- Formulated **2³ full factorial** setup to investigate the impact of grit size, feed rate, and power on **Material Removal Rate**

PROFESSIONAL EXPERIENCE

AVN Travels

Market Research Analyst | *A destination management firm offering comprehensive travel services* [May'22 - Aug'22]

- Earned a **Letter of Recommendation** for driving and fostering remarkably strong & successful international partnerships
- Extensively researched **15+** potential countries and strategically endorsing **Australia** as the prime **optimal target market**
- Collaborated in generating a staggering amount of **INR 10M** revenue within three month through strategic market entry

LEADERSHIP AND ORGANIZATIONAL EXPERIENCE

Abhyuday IIT Bombay

Campaigns Manager | *Visionary social body channelizing youth through impactful social initiatives* [Apr'21 - Mar'22]
Leadership | *Led a proficient 2-tier team of 20+ coordinators* | *Patronages: UNICEF India, UNESCO, PETA* | *Outreach: 5M+*

- Spearheaded a one month pan-India campaign 'Sangharsh - Conquering Covid' with **UNICEF India** achieving **2M+** reach
- Liaised actively with **Versova Beach Cleanup** Campaign, engaging **300+** volunteers to successfully clear **80+ tons** of litter
- Orchestrated a **nationwide plantation drive** in collaboration with **6+ NSS & NGOs**, involving **300+** individuals in planting

Key Initiatives & Management | *Integral part of dynamic 21-member team* | *7 competitions, 20 events & 150+ campaigns*

- Collaborated with **3 NGO** and **Quase** organization to provide **menstrual hygiene** support; distributed **100+** sanitary pads
- Targeted **10,000** underprivileged students of **80+** schools to give career guidance with **50%** y-o-y growth as a part of **CCC**
- Initiated **month-long campaign** focused on **climate change awareness** through competitions, science exhibitions & talks

NCAIR Lab

Teaching Assistant | *ME-781: Statistical Machine Learning and Data Mining* [Aug'23 - Present]

- Coordinated in group of **13 TAs** and was responsible for the assessments, grading & counselling of **250+** course students
- Mentored **7 teams** each consisting of **5 students** for ideation/development of machine learning product for final project

EXTRA-CURRICULAR ACTIVITIES

Technical Skills

- Languages and Libraries:** C++ | Python | SQL | re | TensorFlow | Pytorch | NLTK | Sklearn | NumPy | Pandas | Matplotlib
- Software and Other:** MS Excel | MS PowerPoint | MS Word | Tableau | Talend | AutoCAD | Solid Works | MATLAB | Git

International Conference

Organizing Committee Member | *Applied AI Next Conference, IIT Bombay* [Aug'23 - Present]

- Coordinated** international keynote speaker & researcher, enriching conference content & fostering global collaboration
- Integral part of a **15-membered** team that secured sponsorship thus ensuring success & financial viability of conference

Cultural

- Showcased mesmerizing **Belly dance** performance in Annual Institute Dance Show (**AIDS**) with audience of **2000+** ['23]
- Performed theater arts at **AnnProd**: a flagship event organized by the **Dramatics Club**, with an audience of **350+** ['22]

Social Work

- Volunteered in cleanup campaign organized by **Abhyuday** with aim of preserving pristine condition of **Powai Lake** ['23]
- Received a **Letter of Recommendation** from **Prayas NGO** for leading **Plasma Donation** initiatives amid **Covid-19** ['21]

NCC

- Successfully completed an year-long **NCC Sports Session** for **Kho-Kho** under the guidance of a professional coach ['19]
- Participated actively in the first ever girl's contingent during the **71st Republic Day Parade** along with **150+** cadets ['20]