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EDUCATION AND SCHOLASTIC ACHIEVEMENTS

Program	Institute	% / CGPA	YEAR
BTech in Mechanical Engineering	Indian Institute of Technology, Madras	8.03/10	2025*
XII (CBSE)	J.K.G International School	90.4%	2021
X (CBSE)	J.K.G International School	88.0%	2019

- Achieved an All India Rank (AIR) of **2376** in the highly competitive JEE Advanced examination among **1.4 lakh** fellow candidates
- Achieved **99.57** Percentile in the JEE Mains examination among more than **6.6 lakh** fellow candidates

PROJECTS

AI Privacy Agents (Professor Project) *Jul '24-Present*	Develop an AI Agent to Leverage Large Language Models for Querying Sensitive Data Without Compromising Privacy ● Developed a **hybrid LLM agent** to securely handle sensitive patient data by leveraging abstraction, redaction, and query segmentation techniques, ensuring privacy while leveraging global LLM capabilities for complex medical queries ● Developed a system for doctors by using explainability techniques like **Chain of Thought** (CoT) and **Grad-CAM** to verify AI-generated results, along with generation of comprehensive medical reports to enhance understanding and trust
Sports Performance Analysis (Professor Project) *Feb '24-Present*	Analyze Ball and Player Motion with the help of Image Processing techniques for Sports Performance Insights ● Developed a ball tracking algorithm using **OpenCV** to monitor ball trajectory based on color, circularity, and area properties and detected ball speed, bounce point, and bat-hitting point with an accuracy of **80%** using mobile camera ● Employed **mediapipe** library**,** frame differentiation, and background segmentation techniques to track players and bowler speed and analyzed their motion patterns to understand their strengths and weaknesses ● Presented the prototype at the IIT Madras Conclave 2024 in Delhi and showcased it to the **RCB Cricket team coach**
Patent Classification (Data Science Student Championship 2024) *Mar '24-May '24*	Develop a model to classify patent papers according to the European Patent Office (EPO) classification scheme ● Preprocessed text using **nltk** (stop words removal, stemming, lemmatization) and vectorized using **tfidfvectorizer** ● Used an ensemble method to merge weights of CNN and RNN models to achieve a higher accuracy of **58%** ● Ranked as top **10** finalist among more than 1000 competitors and presented the solution in front of the jury
Query Documents using RAG (Personal Project) *June '24-Jul '24*	Build and Deploy a **LLM** Question-Answering Model on PDFs or Word docs using **Langchains** and Huggingface Model ● Developed a Retrieval-Augmented Generation (**RAG**) architecture using Langchain and a **LaMini-T5-738M** model ● Built a document retrieval system leveraging sentence transformers (**all-MiniLM-l6**) to convert documents into vector embeddings and Facebook's **FAISS** vector store for efficient vector similarity search ● Deployed a user-friendly interface using **Streamlit** to enable local execution of the question-answering model
SubNetworks in Neural Networks (Research Project) *Jul '24-Present*	Investigate the underlying patterns and relationships between weights within subnetwork of the original model network ● Discovered a hidden network within neural networks, representing approximately **30%-35%** of the original model's parameters with an accuracy comparable to the original model, reducing computational costs and energy consumption ● Analysed the weight distributions in **ResNet50** and its subnetwork and Identified that the weight distributions follow a **lognormal distribution**, providing insights into the underlying characteristics and behavior of the neural network

POSITIONS OF RESPONSIBILITY

XR Designer **XR Extended Reality Innovation Group** *Oct'23-Jul'24*	● Collaborated with **ICXR**, an intercollegiate XR community, assisting students with XR design-related queries and challenges in Blender and Adobe After Effects ● Led a team of **XR designers** and created 3d models, Environment, VFX, and UI designs for multiple AR and VR projects ● Conducted a workshop on XR design principles and techniques, including hands-on Blender training for beginners
Design & VFX **InterIIT Team** *Sept'23-Aug'24*	● Achieved **6th Rank** in InterIIT Cultural 6.0's 3D Animation Competition (IIT Kharagpur) with a **600-frame** character animation created using Blender Software and enhanced with Adobe After Effects post-editing ● Participated in 24-Hours Design marathon competitions and secured the **Top 10th** Position among all 23 IITs
Executive **Table Tennis Club** *Nov'22-May'23*	● Conducted and managed the Inter Hostel boys' and girls' table tennis tournament with participation of **15+ teams** ● Organised various fun games in Club weekender sessions, which had the presence of more than 60 students ● Taught basic table tennis skills like serve, counter, smash, and topspin to more than 30 students in beginner sessions

COURSEWORK AND SKILLS

Tensorflow 2.0: Deep Learning and Artificial Intelligence+	Probability, statistics, and stochastic process
Data Science: Transformers for Natural Language Processing+	Differential Equations
IBM Data Science Professional+	Series and matrices
Machine Learning Specialization+	Design & Optimisation of Energy Systems*

Languages	Python, SQL, HTML	**Software**	Tableau, Excel, PyCharm, AutoCAD, Figma, Blender
Libraries	Scikitlearn, LangChains, HuggingFace, Numpy, Pandas, Matplotlib, Seaborn, nltk, OpenCV	**Miscellaneous**	Transformers(LLMs), RAG, ANN, CNN, RNN, A/B Testing, DataScience Pipeline

EXTRA-CURRICULAR ACTIVITIES

Activities and Hobbies	● Created a World restaurant analysis dashboard using Tableau and ranked **Top 10th** Position in Data-Vizz2 competition ● Actively track and stay updated on the latest trends and advancements in the field of Artificial Intelligence (AI) ● Passionate about creating animations and UI designs, with active participation in various related competitions

* Ongoing + Online Course