Purva Pratapwar | ME22B179 | IIT Madras | LinkedIn | Github

EDUCATION AND SCHOLASTIC ACHIEVEMENTS

Program	Institution	CGPA / Percentage	Year
B.Tech in Mechanical Engineering	Indian Institute of Technology Madras	7.4/10	2026
XII (CBSE)	Vishwanath Appa Hurne College	87.83%	2022
X (CBSE)	Mahatma Phule English School	98%	2020
Scholastic Achievements	● Attained qualification for **Stage-2** of the 3 stages in Dr. Homi J. Bhabha Balvaidnyanik examination ● Secured **98.40** percentile in **JEE Mains** and attained category rank of **1247 in JEE Advanced** ● Scored **99.2** percentile in the Maharashtra State Common Entrance Test Cell (**MHT CET**) exam		

PROFESSIONAL EXPERIENCE

Vulnerability Management *Summer Internship'25* **@BNY**	*Real-Time Risk Dashboard with **API-Driven Data** Ingestion and integrating **automatic Jira Creation*** ● Automated **API-to-Snowflake DB** vulnerability data ingestion, cutting manual ETL effort by **90%** ● Built interactive **Dash UI dashboard** for real-time tracking using bar charts & pie graphs to visualize ● Optimized SQL query to fetch **10K+** records at once, under **500 ms** and display it in dashboard ● Scheduled API data fetch via **Airflow DAGs,** ensuring synchronized DB & dashboard data refresh ● Integrated Jira **REST APIs** to bulk-fetch vulnerability **JSON payloads** with the custom query filters ● Added one-click **Jira creation**, syncing it to DB & dashboard via **Snowflake-Python Connection**

PROJECTS

SpotyMood *[Self Project]*	***AI-powered** personalized Spotify playlist generator by analyzing faces, voice, or manual mood input* ● Developed interactive **Dash + Flask** web app for **mood detection** and then Spotify playlist creation ● Achieved mood detection from face using **OpenCV, TensorFlow** and voice by **Whisper, Pyaudio** ● Built a playlist generator integrating **Spotify's API** with custom mood-based audio feature analysis
AgriMitra *[Hackathon project]*	***AI farming advisor** having voice-enabled, data-driven personalized guidance with **80% accuracy*** ● **React**-based chat interface with **AI voice search** model (local dialects) & offline farming knowledge ● Built **weather-API**, **ML model** for smart irrigation, crop recommendations, & pest detection advices ● Provides **weather alerts**, practical safety measures & relevant government policies to help farmers
Credit Card Fraud Detection *[Self Project]*	*Built fraud detection system with **ROC-AUC** using **SMOTE**-balanced **XGBoost**, beating other models* ● Prepared data using pandas & **scikit-learn**/imblearn for scaling (**SMOTE**) imbalanced transactions ● Trained & compared **LogisticRegression**, **RandomForest** & **XGBoost** with **ROC-AUC** evaluation ● Optimized by tuning **XGBoost** using **GridSearchCV** & saved best model with joblib for prediction
Expense Tracker *[Self Project]*	*Smart Expense Tracker with **Dash, Plotly & Snowflake-Ready** architecture for efficient management* ● Built an interactive expense dashboard with **Dash, Plotly, and Pandas** featuring real-time updates ● Implemented **JSON data** persistence, dynamic callbacks, and input validation using Dash state ● Designed modular UI with custom CSS, responsive layout, and category-wise charts for analysis
YouTube Clone *[Self Project]*	*Developed a YT clone with search functionality in **Python (Dash)**, integrated **YT & Google & APIs*** ● Built a YouTube clone with **Dash Bootstrap**, focusing on search to avoid shorts/feed distractions ● Used **YouTube API** for **search results** and added **voice search** by using **Google Assistant API** ● Implemented **Google Sign** In using **Firebase AUTH** & utilized **SQLite** to store the user preferences
Algorithmic File Compressor *[Self Project]*	*Efficient Huffman Coding Algorithm for Lossless **Text Compression** and Accurate Decompression* ● Developed **Huffman tree** using **MinHeap and frequency** analysis for the prefix code generation ● Built encoder mapping characters to **variable-length codes** with metadata and compressed data ● Rebuilds Huffman tree from frequency table for **lossless decoding** and exact text reconstruction

SKILLS AND COURSEWORK

Functions of Several Variables	Series and Matrices	Linear Algebra	Differential Equations
Scientific Computing	Covers Linux, programming, Octave, clusters, GPU computing, visualization, and LaTeX		
Libraries	Pandas, Numpy, Matplotlib, SQLAlchemy, Requests,Dash, Streamlit, Scikit-learn, OpenCV, PyTorch		
Coding Skills	Python, C++*, DSA in Python, HTML, CSS, Tailwind CSS, MySQL, Dash UI, JavaScript, OOPS*, Java*, ReactJS*, Node JS*, Machine Learning, Natural Language processing(NLP)**		
Tools & Software	Linux OS, Snowflake, Dataiku, Git, GitHub, LaTeX, AutoCAD, Fusion 360, GNU Octave, Matlab, GeoGebra, Jupyter Notebook, IDEs, Canva, Figma, Illustrator, Photoshop, MS Clipchamp		

POSITION OF RESPONSIBILITIES

Co-Curricular Secretary	**TechSoc** *(Aug'24-May'25)*	● **Core of Design Vertical** of TechSoc, maintaining consistent branding across many institute bodies ● Led a **two-tier branding team** independently, managing design workflows and mentoring juniors
	Shaastra O&IP *(Dec22'- Jan23')*	● Volunteered in **Shaastra's Operations & Infrastructure team**, assisting with the event logistics ● Managed **on-ground coordination**, coordinating **10+ vendors** along with serving **30K+ attendees**
Student General Secretary	**Extra Mural Lectures(EML)** *(Apr'23-May'24)*	● **Creative Cell Coordinator** at EML: hosted events, managed publicity & handled **5000+ attendees** ● Led publicity activities for **15+ talks** featuring speakers like **Dr. S. Somanath and K. Annamalai** ● **Moderated the lecture** by Padmashri Awardee Dr. Prakash Baba Amte and Dr. Mandakini Amte
	Saathi Team *(Aug'24-May'25)*	● **Super-Coordinator of Design & Publicity Vertical** of team Saath, handling all outreach events ● Led **10+** large-scale student events, managing **1000+ participants** in collaboration with the team
Cultural Secretary	**Drama Club** *(May23'-April24)*	● **Coordinator of Drama Club**, managing PR, participating in the **biggest drama fest** in the institute ● Handled theatre arts events at the cultural fest, managing **1000+ participants** from **20+ colleges**

EXTRA-CURRICULAR ACTIVITIES

● Performed in Inter **IIT Street Play** for IIT Madras **(2023 & 2024)**, demonstrating strong stage presence and public speaking skills
● Won **1st place at the district level** in long-distance running and Kabaddi, showcasing the athletic performance and team spirit
● Awarded **"Student of the Year" twice** and served as **school team leader for 3 years** and showcasing my academic excellence

* : Beginner Level | ** : Ongoing | DB: DataBase | ETL : Extract, Transform, Load | IDEs: Integrated Development Environment