CHEMICAL ENGINEERING/FINANCIAL ENGINEERING

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2025	M.TECH Dual Degree 5Y	IIT Kharagpur	8.31 / 10
2019	CBSE (XII)	Kendriya Vidyalaya	89%
2017	CBSE (X)	Kendriya Vidyalaya	10 / 10

WORK EXPERIENCES

Machine Learning Engineer | Chi SquareX Technologies — Oct 2021 - Feb 2022

- Worked on several client based projects related to **Machine Learning, Natural Language Processing and Deep Learning,** diligently ensuring timely completion including feature extraction, semantic clustering, gaussian process regression and more.
- Designed and implemented a **semantic relation classifier** using the SemEval-2010 dataset. Implemented a **LSTM model** which effectively captured the context and dependencies between entities to accurately classify the semantic relationships with **65%** accuracy.
- Designed and implemented an **automatic feature extractor** on the PAMAP-2 dataset. The **CNN model** focused on capturing high-level representations from the data, while the **Convolutional Autoencoder** was used to compress and reconstruct the input data.

Julia | Open-Source Developer | https://github.com/ArunS-tack

- Actively contributed to the main **Julia** repository and **JuliaStats** by updating **mathematical functions** and improving their **usability**.
- Added missing functions such as **mean** and **variance** for the **Non-Central Beta Distribution** and **corrected** existing **hypothesis tests**.
- Made adjustments to the **relax eltype**, allowing for compatibility with a wider range of data types that operate on different **matrices**.
- Addressed output **eltype discrepancies** so that input and output types match in different operations. (input Float32 => output Float32)
- Worked on improving the display and printing capabilities within the **Julia REPL**, making it easier for users to interact with the language.
- Raised the **maximum file descriptor limit**, enabling efficient handling of file operations and enhancing the overall performance of the system.

PROJECTS

Automated Trading Bot | https://github.com/ArunS-tack/T-bot

- Created a versatile **cryptocurrency/stock trading bot** that autonomously executes orders using **TradingView webhook** alerts.
- The bot adjusts trade volumes automatically according to a predetermined initial investment, supporting both **spot and futures trading**.

Solana Transaction Explorer | https://github.com/ArunS-tack/T-bot

- Developed an application using **React** and **web3.js** that takes **Solana transaction ID** as input and displays **transaction details.**
- It presents essential transaction information on Solana **blockchain** such as the **transaction signature, result, fee, slot,** and **block time**.

SKILLS AND EXPERTISE

Language / Tools : Python, JavaScript, HTML, CSS, Rust,Vercel, Heroku
Libraries : React, Next.js, Bootstrap, Node.js, Anchor, Numpy, Pandas, Scikit-Learn, Tensorflow,Matplotlib, Seaborn,TypeScript, web3.js

ENTREPRENEURIAL EXPERIENCES

Web3 Venture

- Co-founded a **web3 venture** specializing in **non-fungible tokens** and leveraging transformative power **blockchain** technology.
- Successfully raised over **$22,000** in **funding** from investors, enabling the project's accelerated growth and **expansion**.
- Successfully generated a **trading volume** of over **$160,000** within **2 months**, showcasing the project's appeal and market acceptance.
- Employed strategic **marketing** and community **engagement** tactics to drive user adoption, resulting in **increase** in **transactional activity**.
- Achieved over **500% returns** for **early-stage investors**, unquivocally showcasing the project's **high-growth** potential.

COMPETITION/CONFERENCE

Beyond Analysis Data Science Hackathon

- Employed a simple **k-fold cross-validation** strategy with 10 folds, using RMSE as the loss function. **LightGBM, CatBoost, XGBoost,** and **Hyper Gradient Boost Regressor** were utilized, along with a **Denoising Autoencoder** combined with LightGBM.
- Placed **22nd** out of **135+ teams** in a highly competitive competition with numerous teams from top institutes.

General Championship | Data Analytics

- Participated in JCB Hall's **Data Analytics** team at Tech GC, focusing on problem of **machine state** prediction on a **TIme series** data.
- Helped boosting **accuracy** from **60% to 91%** by analyzing **Time series classification** architectures and implementing a **CNN-LSTM** model.

AWARDS AND ACHIEVEMENTS

- Achieved a **department change** from **Mining Engineering Dual** to **Chemical Engineering Dual**, with a Cumulative Grade of **9.2**.
- Changed **Master's Dual degree** from **Chemical** Engineering to **Financial** Engineering.

COURSEWORK INFORMATION

Regression and Time Series Modelling | Programming and Data Structures | Pytorch for Deep Learning* | Python for Machine Learning* | Web Development* | Tensorflow for Deep Learning*

[*Certifications]