***Epoch - Neural Odyssey - Day – 2***

***Event Overview***

* ***Event Name: ML/DL Streamlit App Challenge***
* ***Duration: 2 hours***
* ***Team Size: 2–4 participants per team***
* ***Task: Build a machine learning/deep learning model on given datasets and create a fully functional Streamlit app with multiple features.***
* ***Judging Criteria: Model type, UI/UX, app features, accuracy, evaluation methods, and overall experience.***

***Judging Criteria (Scoring Breakdown)***

| ***Criteria*** | ***Max Points*** | ***Details*** |
| --- | --- | --- |
| ***Model Type*** | ***20*** | ***Baseline models (Linear Regression, Logistic Regression) get fewer points. More complex models like XGBoost, CNN, LSTMs get higher points.*** |
| ***Accuracy & Evaluation*** | ***20*** | ***Higher accuracy and proper evaluation (confusion matrix, RMSE, precision-recall, etc.) get more points.*** |
| ***UI & App Features*** | ***20*** | ***Intuitive design, multiple pages, interactivity, and well-structured UI are rewarded.*** |
| ***Feature Engineering & Preprocessing*** | ***15*** | ***Handling missing values, feature selection, data transformation, and augmentation.*** |
| ***Overall Experience*** | ***15*** | ***App responsiveness, explanation of insights, and presentation of results.*** |
| ***Bonus*** | ***10*** | ***Innovative feature additions like explainability (SHAP), visualizations, etc.*** |

***Tech Setup & Guidelines***

* ***Required software: Python, Streamlit, Sklearn, XGBoost, TensorFlow (if deep learning is needed).***
* ***Participants must use Streamlit for UI.***
* ***Internet allowed to search for resources but no pre-trained models unless explicitly allowed.***

***Surprise Challenge (Bonus Points)***

* ***Stack at least 3 different models (e.g., XGBoost, Logistic Regression, Neural Network, etc.) and create a meta-model for final predictions.***
* ***The Streamlit app must include an interactive visualization where users input values and see which features contribute most to their stroke risk score.***
* ***Teams must compare Random Search vs Grid Search for model tuning. Measure which method finds the best hyperparameters faster.***

***Datasets***

[***https://www.kaggle.com/datasets/mahatiratusher/stroke-risk-prediction-dataset-v2***](https://www.kaggle.com/datasets/mahatiratusher/stroke-risk-prediction-dataset-v2)