Weekly Journal

**Weekly Journal for Shayshank and Mohit: December 2, 2024 – January 4, 2025**

| **S.No** | **Date** | **Week** | **Task** | **Comments** |
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| 1 | 2nd December 2024 | Week 1 | **Shayshank:** Conducted initial dataset review, handled missing values, encoded variables, and started feature engineering. | Faced inconsistencies in AQI data; resolved by standardizing preprocessing strategies. |
|  |  |  | **Mohit:** Set up Python environment, performed EDA, generated visualizations, and analysed correlations. | Simplified data visualization by filtering for specific regions. |
| 2 | 9th December 2024 | Week 2 | **Shayshank:** Refined feature engineering, explored imputation methods, and prepared data for model training. | Researched and implemented median imputation for missing values. |
|  |  |  | **Mohit:** Split data, trained Random Forest Regressor, and evaluated model performance. | Used GridSearchCV for hyperparameter tuning. |
| 3 | 16th December 2024 | Week 3 | **Shayshank:** Conducted advanced EDA, visualized country-wise pollutant averages, and analysed feature impacts. | Redesigned heatmaps for better clarity. |
|  |  |  | **Mohit:** Fine-tuned model, conducted residual analysis, and integrated visualizations into outputs. | Focused on feature importance analysis to enhance interpretability. |
| 4 | 23rd December 2024 | Week 4 | **Shayshank:** Drafted methodology and EDA sections, analyzed data trends, and ensured consistency in report findings. | Simplified explanations and incorporated visual aids for clarity. |
|  |  |  | **Mohit:** Drafted model training/results sections, visualized predictions, and aligned outputs with report narrative. | Reviewed IEEE guidelines to ensure compliance. |
| 5 | 30th December 2024 | Week 5 | **Shayshank:** Finalized report sections, verified citations, and prepared individual journal. | Used a shared document for real-time collaboration. |
|  |  |  | **Mohit:** Finalized visualizations, prepared presentation slides, and recorded the video with Shayshank. | Scheduled dedicated work sessions for uninterrupted focus. |