Implementation Guide: PS35 - Rural Infrastructure Classification using IBM AutoAI

Step 1: Create IBM Cloud Account

- Go to https://cloud.ibm.com and sign up for a free IBM Cloud Lite account.
- Verify your email and login to the dashboard.

Step 2: Create Cloud Services

- Go to IBM Cloud Catalog.
- Search and create these services:
  - Cloud Object Storage
  - Watson Studio
  - Watson Machine Learning (Lite plan)
- These services will be linked to your project in Watson Studio.

Step 3: Download and Prepare Dataset

- Visit: https://aikosh.indiaai.gov.in/web/datasets/details/pradhan_mantri_gram_sadak_yojna_pmgsy.html
- Download the dataset and convert it to CSV format.
- Open the CSV and remove any unwanted columns or missing values.

Step 4: Create Project in Watson Studio

- Go to https://dataplatform.cloud.ibm.com/
- Click 'Create Project' > 'Create Empty Project'.
- Name your project and attach the Cloud Object Storage.

Step 5: Upload the Dataset

- Inside your Watson Studio project, go to the 'Assets' tab.
- Click 'Add to Project' > 'Data Asset' and upload your CSV file.

Implementation Guide: PS35 - Rural Infrastructure Classification using IBM AutoAI

Step 6: Create AutoAI Experiment

- Click 'Add to Project' > 'AutoAI Experiment'.
- Choose your uploaded dataset.
- Select the column containing the scheme name (e.g., PMGSY_SCHEME) as the Target.
- Click 'Run Experiment' to start model training.

Step 7: Review and Select the Best Model

- AutoAI tests various algorithms and shows the best model in a leaderboard.
- View accuracy, precision, and other metrics.
- Save the best performing pipeline.

Step 8: Deploy the Model

- Click your saved model under 'Assets'.
- Click 'Deployments' > 'Create Deployment'.
- Choose 'Online Deployment' to generate a REST API.
- Copy the endpoint URL for testing or integration.

Step 9: Test the Model

- Use Postman or a Python script to send sample data to the REST API.
- Check if the correct PMGSY scheme is predicted.

Step 10: Optional - Build a Frontend

- Create a simple web UI using HTML + JavaScript or Flask.
- Let users input project details and view predictions.
- Connect the form to the REST API deployed on IBM Cloud.

Conclusion

Implementation Guide: PS35 - Rural Infrastructure Classification using IBM AutoAI

This guide walks beginners through a complete end-to-end implementation of a machine learning model using IBM AutoAI to classify PMGSY infrastructure projects. This process involves no advanced coding and is suitable for students and professionals entering the AI field.