Phase-3 Improving Data Accuracy

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Project Title: Improve Data Accuracy in CRM Using AI

Automated Data Entry & Accuracy

- Natural language processing (NLP):AI can extract relevant customer data from emails, chart logs, and documents, reducing manual input error.
- Optical Character Recognition (OCR): Convert business cards, forms, and invoices into structure CRM data.
- Auto-Fill & Auto-Correction: AI suggest and correct data entry mistakes based on historical data.

Step 1: Duplicate Detection & Data Cleaning

- **AI-Driven Duplication:** Identifiers and merges duplicate record using fuzzy matching machines.
- **Anomaly Detection:** flags inconsistent or suspicious entries for review.
- **Data Enrichments:** AI pulls real-time updates from external sources to keep records current.

Step 2: AI-Power data validation

- AI-Powered data validation. Anomaly detection with AI.
- A Random Forest model detects unusual patterns in CRM Data.
- from sklearn. ensemble import Random Forest classifiers.
- #Train a Random Forest Model For anomly detection

Clf=

Random Forest classifier (n_estimator=30, max_depth=5, random_state=42)

Clf.fit(X_train,Y_train)

#Predict anomalies

Y_pred = clf.predict(X_test)

Step 3: Automating Data Cleaning With AI(AutoAI)

- Automating using IBM AutoAI for CRM Data Optimization.
- AutoAI automates data preprocessing, model tuning, and validation for CRM data accuracy.
- Steps to use AutoAI:

Set Up IBM Cloud (Enable Watson studio &AUTOAI)

Upload CRM Experiment (Create an experiment)

Run AI Experiment (AUTOAI generates the best models)

Review Data Quality Reports (Check accuracy, completeness & consistency metrics)

Step 4: Model Evaluation for CRM Data Accuracy

- Accuracy: How correct the data is.
- Precision & Recall: Checks for duplicate or inconsistent records.
- ROC AUC: Evaluates classification performance for incorrect entries.
- From sklearn. Metrics important

```
Classification_report' Confusion_matrix,
Roc_auc_score

Import seaborn as ans
Import matplotlib. pyplot as plt.


#Classification Report
Print("\nclassification Report:")
Print(Classification_report(y_test, y_pred))


#confusion matrix  conf_matrix=
confusion_matrix(y_test,y_pred)
sns.heatmap(conf_matrix,
annot=True,                fmt='d',
cmap='Blues')
plt.title("Confusion        Matrix")
plt.show()
```

Step 5: Insight & Business Impact

1. CRM Data Quality Before & After AI Implementation
2. Business Benefits of AI-Driven CRM Data Accuracy

- Better customer insight: Accurate data enables personalized marketing & customer retention.
- Faster Decision-Making: Reduces manual data errors & improves CRM analytics.
- Improve Compliance: Ensures regulatory adherence (e.g, GDPR, CCPA).
- Cost Saving: Minimizes duplicate records & redundant efforts.

Observations:

1. IMPROVE CRM OBSERVATIN AND ANALYSIS

- **Define key matrix:** Track Customer interactions, Response times, and engagement rates.
- **Automated reporting:** Set up dashboards and alerts for data anomalies.
- **AI and predictive analytics:** Use machine learning to analyse trends and suggest improvements.

2. Integration and Consistency

- **Sync with other tools:** Ensures CRM integrates with marketing, sales, and support platforms.
- **Consistent updates:** Establish workflows for real-time data syncing across departments**.**

Conclusion:

AI dramatically improves CRM data accuracy by eliminating errors. This modified version aligns with improving Data accuracy in CRM using AI, while keeping relevant AI technique from your original document. Let me know if you need any refinements.