BANK CHECK PROCESSING AUTOMATION

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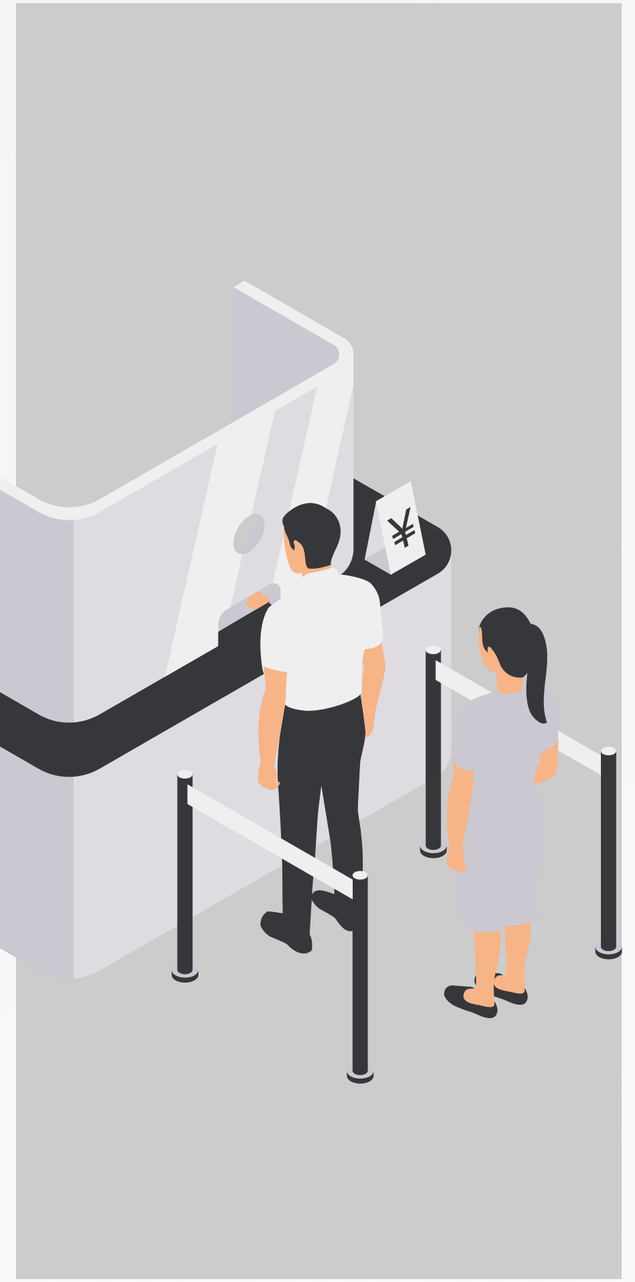
CONTENT

BUSINESS UNDERSTANDING

Bank employees process numerous checks daily by carefully reading and manually entering handwritten amounts into the banking system

- Human Errors
- Time-Consuming
- Operational Inefficiencies

Automate the check processing system using machine learning models

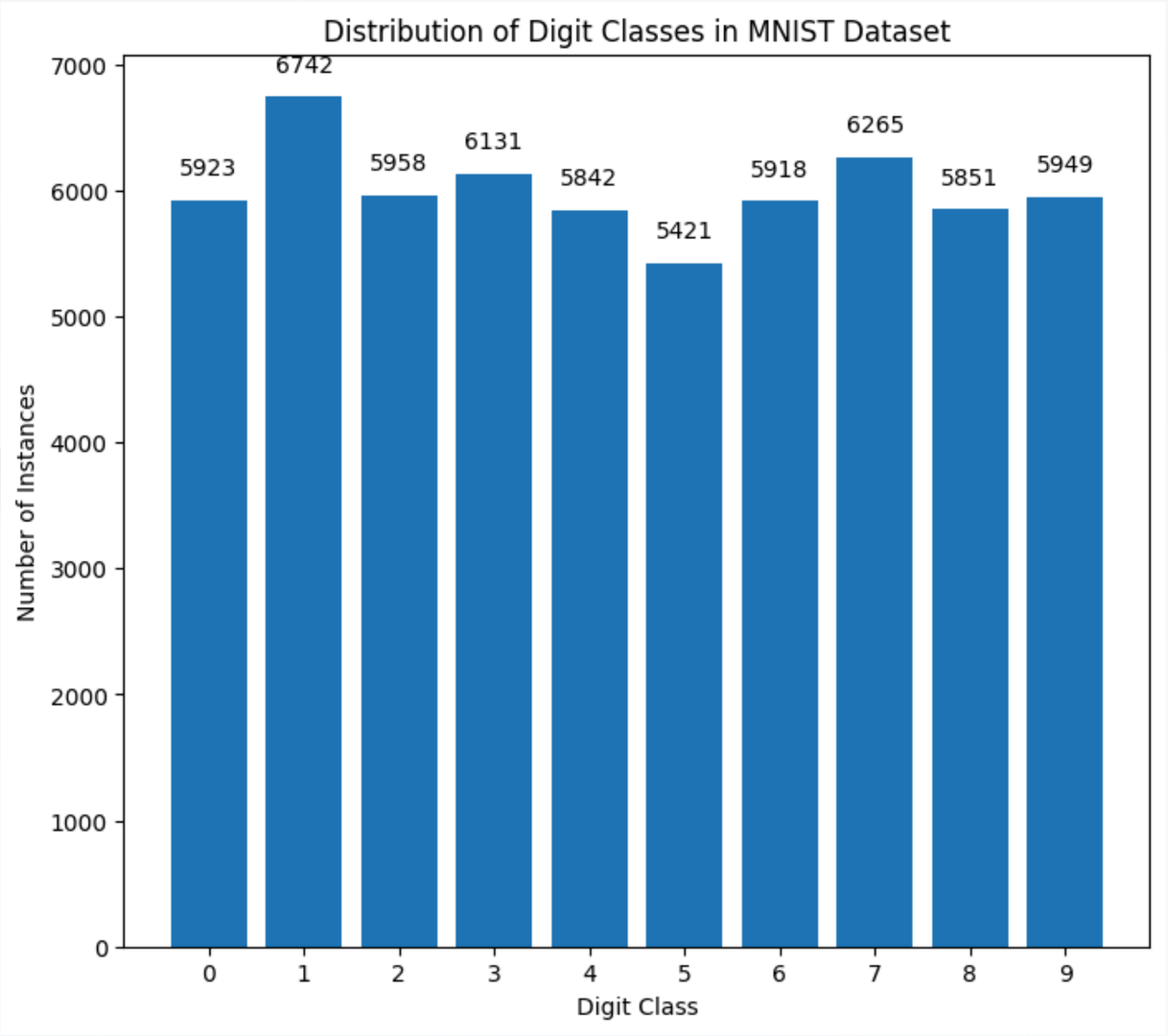


DATA UNDERSTANDING

I used MNIST dataset:

- 70,000 grayscale images of handwritten digits (0-9)
- Training set: 60,000 images, Test set: 10,000 images
- Each image is 28x28 pixels, with pixel values ranging from 0 (black) to 255 (white)

The dataset is generally balanced across digit classes



DATA PREPARATION

Step n° 1

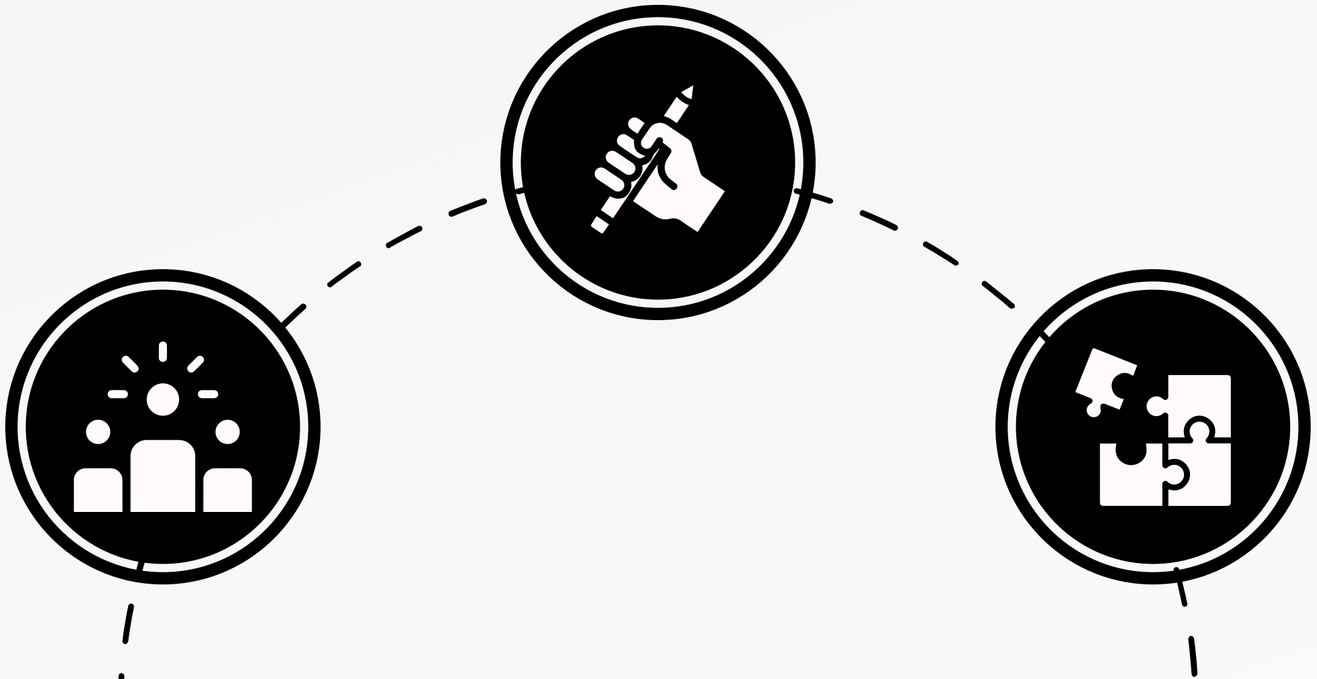
Checked for missing or invalid values and none were found

Step n° 2

Checked for duplicates and none were found

Step n° 3

Scaled pixel values to a [0, 1] range by dividing by 255



MODELING AND EVALUATION

I used 3 models:

- Naive Bayes
- Gaussian Bayes
- KNN (k= 10)

	Naive Bayes	Gaussian Bayes	KNN
Accuracy	0.77	0.91	0.96

CONCLUSION

- The objective was to automate the recognition and digitization of handwritten check amounts using machine learning
- Utilized the MNIST dataset with 70,000 images of handwritten digits (0-9)
- Used 3 models
- **KNN** model achieved the highest accuracy, making it the best choice for digit recognition in this context
- The system will reduce manual processing, increase accuracy, and improve operational efficiency in bank check processing

THANK YOU

Any Questions?