



AI-FASHION-IMAGE- CLASSIFICATION

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DATE: 15TH NOVEMBER 2024

PROJECT OVERVIEW

Develop AI-based model for fashion image classification

- Focuses on creating an advanced machine learning model to accurately classify images of fashion items.
- Leverages Convolutional Neural Networks (CNN) for efficient pattern recognition in clothing images.
- Aims to automate and streamline the process of categorizing fashion items, reducing manual effort.

Enhance design, marketing, and customer experience in fashion e-commerce and retail

- Improves design workflows by providing quick and accurate image categorization, aiding designers in trend analysis and inventory management.
 - Boosts marketing strategies by enabling targeted advertising and personalized recommendations based on accurately classified fashion images.
 - Enhances customer experience by offering better search capabilities and product recommendations, leading to increased satisfaction and sales.
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BUSINESS PROBLEM

Existing models lack precision:

- Current fashion image classification models often fail to accurately categorize complex or nuanced images.
- This imprecision affects the reliability of automated systems in fashion e-commerce, leading to incorrect product categorization.

Inefficiencies in design and marketing:

- Design teams rely on accurate image classification to track trends and manage inventory efficiently.
- Marketing efforts suffer when products are misclassified, resulting in ineffective targeted advertising and promotions.

Result: Misaligned inventory, poor customer experience, lost sales:

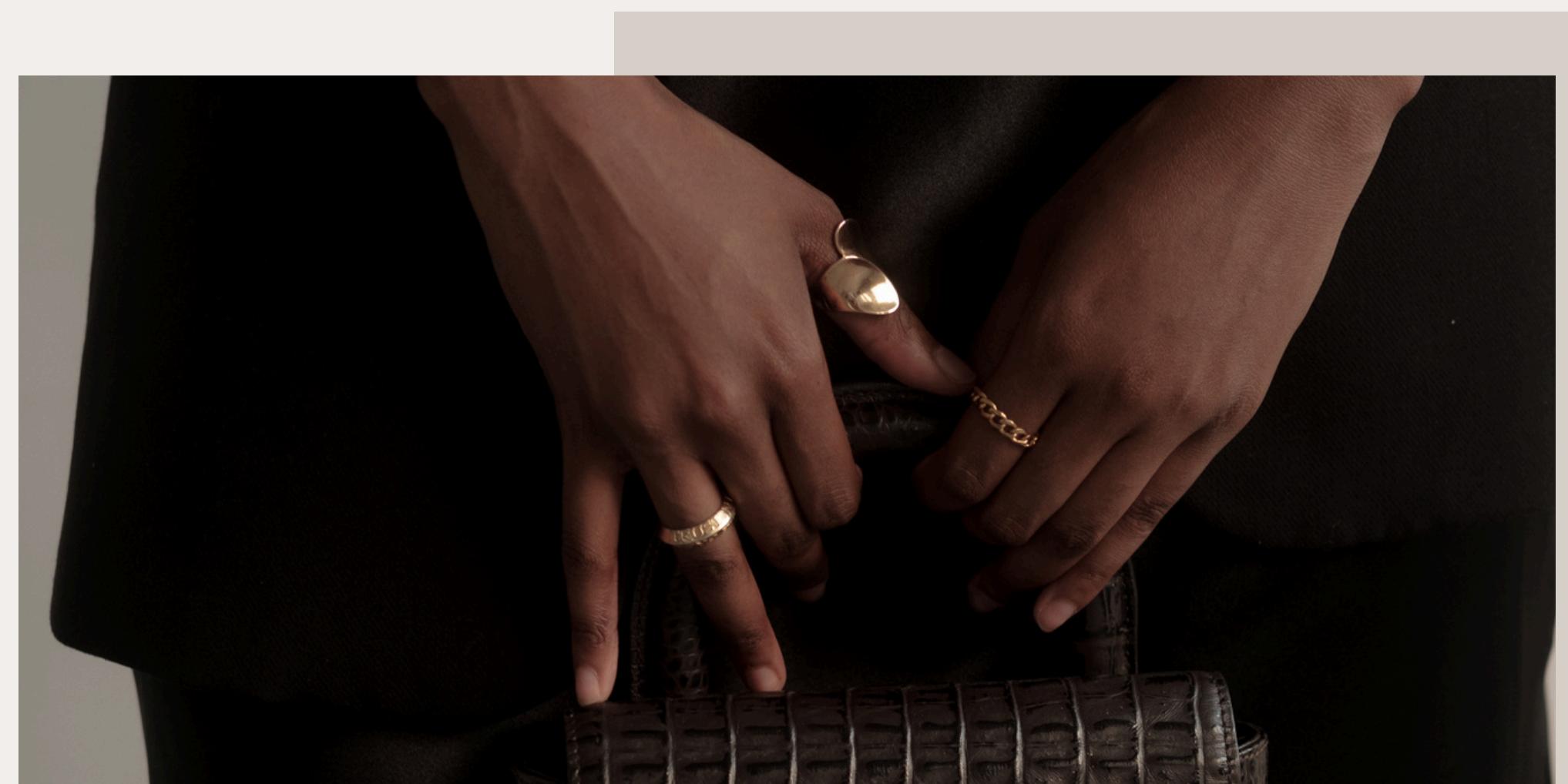
- Misclassification leads to inventory issues, such as overstocking of less popular items and understocking of high-demand products.
- Customers face difficulties in finding products, which negatively impacts their shopping experience and satisfaction.
- Inefficiencies in inventory management and marketing strategies lead to decreased sales and potential revenue loss.



STAKEHOLDERS



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- Fashion designers
 - E-commerce platforms
 - Retailers
 - Consumers
 - Industry leaders, creative directors
 - Technology developers





DATA DESCRIPTION

- Fashion-MNIST dataset: 70,000 grayscale images
- Training set: 60,000 images
- Test set: 10,000 images
- Categories: Dresses, coats, sandals, shirts, sneakers, bags, ankle boots

OBJECTIVES

- Develop robust AI model for clothing classification
- Achieve high accuracy
- Explore advanced architectures
- Implement real-time testing and deployment



Elegant

Aesthetic

Casual



METHODOLOGY

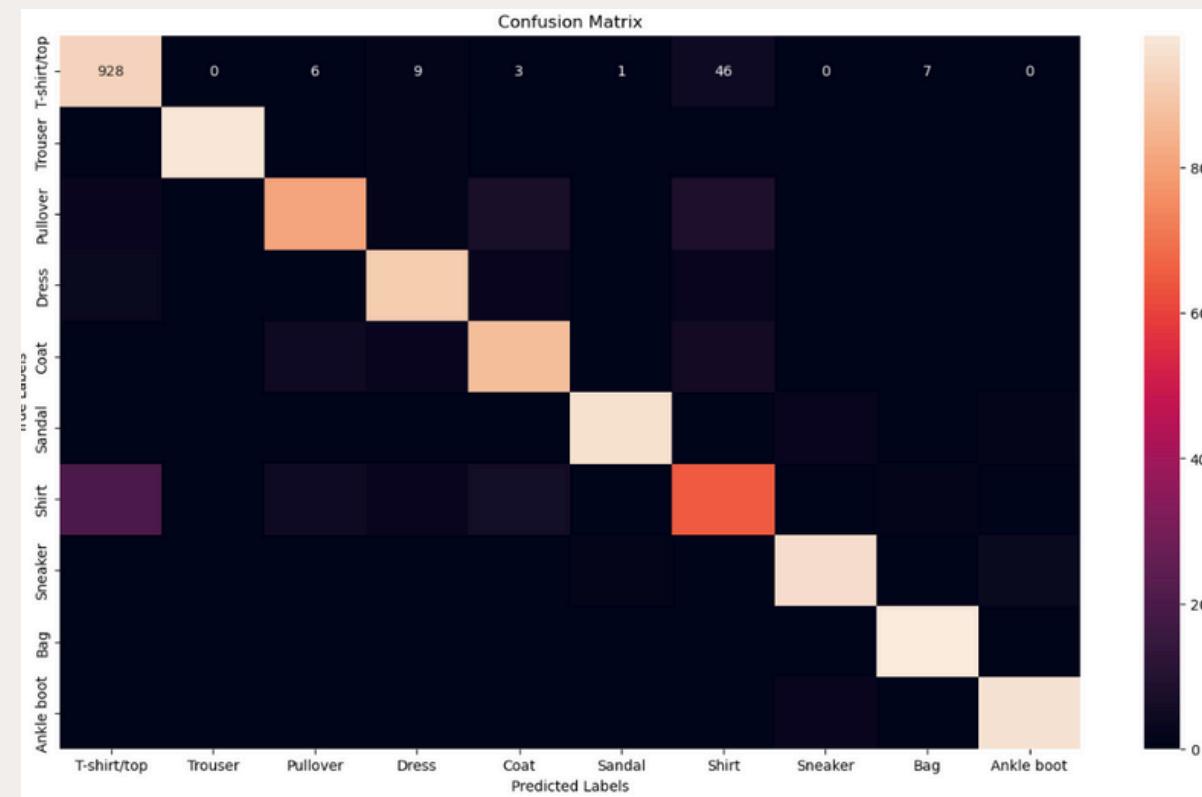
1. Data Collection
2. Data Preprocessing
3. Model Development (CNN architecture)
4. Training and Validation
5. Evaluation (accuracy, precision, recall, F1-score)



RESULTS AND FINDINGS

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- Overall accuracy: 90%
- Lower precision and recall for "Shirt"
- Confusion matrix highlights specific challenges



	precision	recall	f1-score	support
T-shirt/top	0.77	0.93	0.84	1000
Trouser	0.99	0.97	0.98	1000
Pullover	0.89	0.81	0.84	1000
Dress	0.90	0.90	0.90	1000
Coat	0.84	0.87	0.86	1000
Sandal	0.98	0.96	0.97	1000
Shirt	0.75	0.65	0.70	1000
Sneaker	0.94	0.95	0.95	1000
Bag	0.97	0.98	0.98	1000
Ankle boot	0.95	0.96	0.96	1000
accuracy			0.90	10000
macro avg	0.90	0.90	0.90	10000
weighted avg	0.90	0.90	0.90	10000

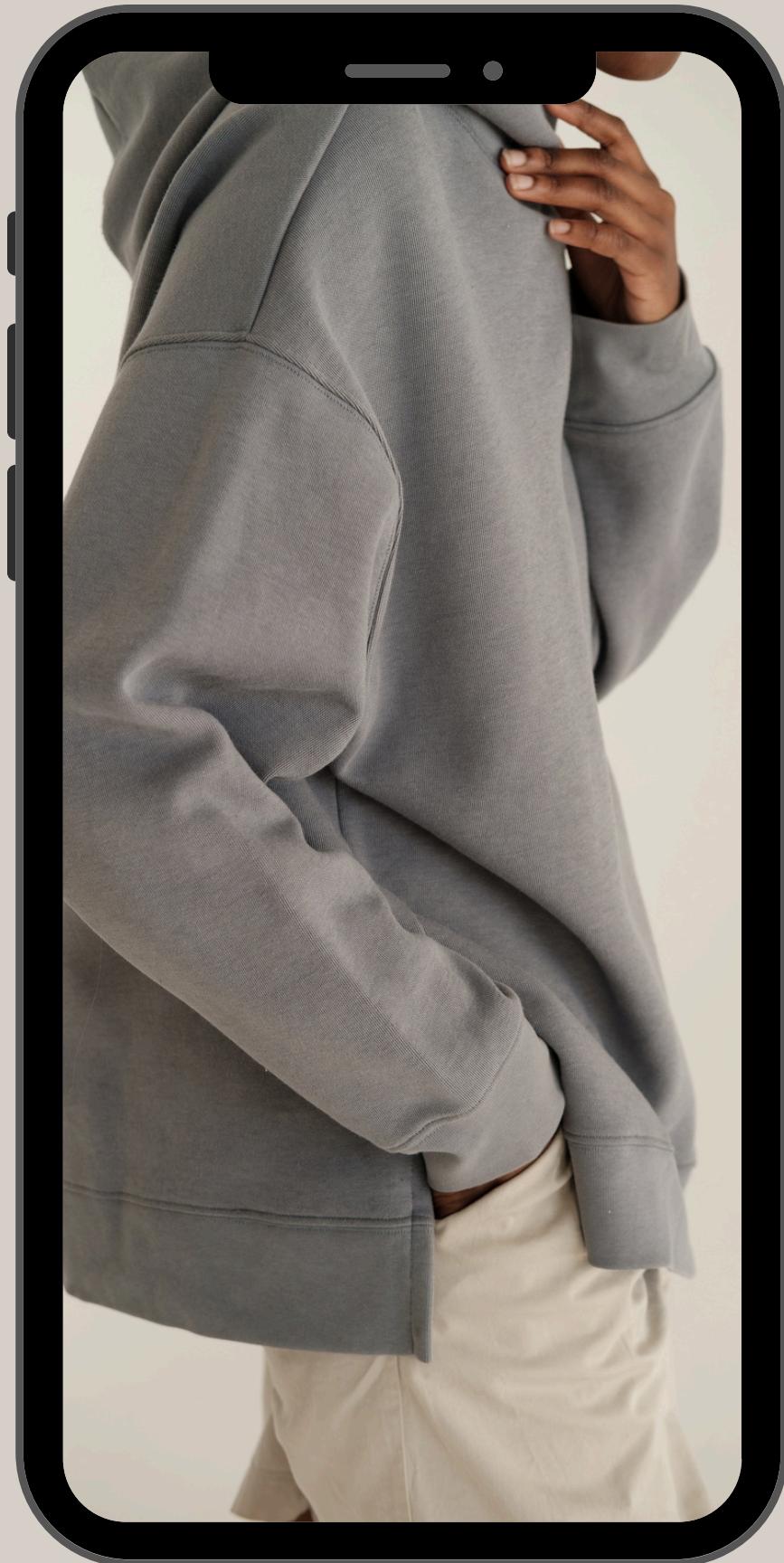


CASUAL

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COLLECTION

Presentation are communication tools that can be used as demonstrations, lectures, reports, and more. it is mostly presented before an audience.



CONCLUSION AND FUTURE WORK

- Findings: High accuracy, some misclassification
 - Recommendations: Use advanced models, incorporate more data, develop feedback loop
 - Future Work: Real-time testing, cross-validation, user feedback integration
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