Week 2 - Task 1 - Assignment - IT Stream

Banking Problem Analysis

GROUP 10

Group X

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Banking Problem Analysis

Problem Statement

- **Problem Definition: Predicting car's actual condition**

Inaccurate vehicle condition assessments in auto financing lead to overpriced loans, increased default risk, and lender losses. Manual inspections are time consuming, easily affected by human error, and vulnerable to fraud, resulting in unfair loan pricing and higher financial risk for both lenders and borrowers.
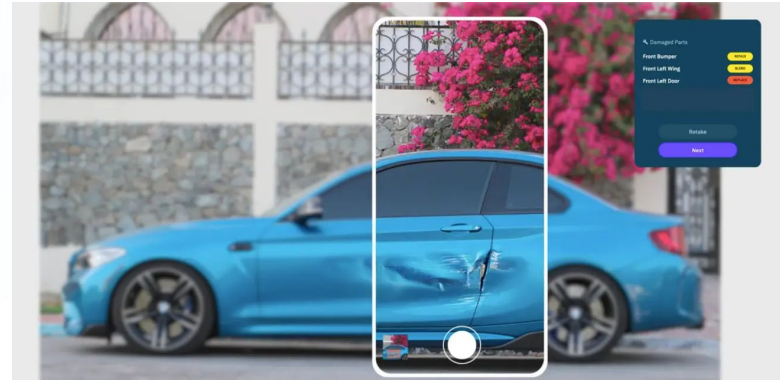
- **Solutions: Computer Vision**

Computer vision technology enables automated vehicle condition assessment, reducing default risk in Livin' Auto. AI-powered image recognition analyzes photos or videos to detect damages, wear, and modifications, ensuring accurate vehicle valuation before loan approval.

This solution prevents over financing by aligning loan amounts with the vehicle's real market value, reducing lender losses in case of default.

AI-Powered Vehicle Assessment

(a)

(b)

Picture 1. Illustration of Vehicle Condition Detection
Source: (a) https://intelliarts.com/blog/computer-vision-for-car-damage-detection/ ; and
(b) https://www.labellerr.com/blog/how-this-insurtech-solving-damage-detection-problem-with-ai/

Technical Feasibility Assessment

- **Feasibility Criteria:**
  - AI-powered vehicle assessments and e-KYC (Electronic Know Your Customers).
  - Use scalable data pipelines to process real-time camera uploads and AI analysis.
  - The vehicle's market value is estimated using AI and real-time market data.
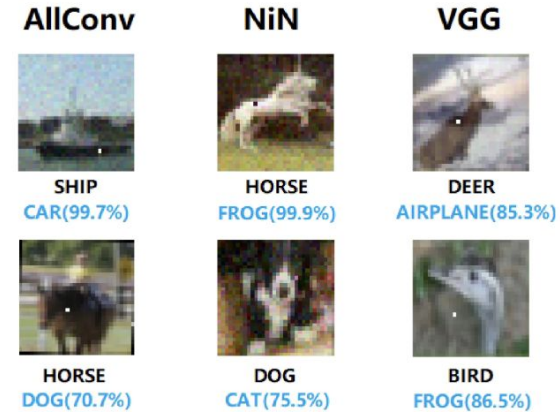
- **Risk and Constraints:**
  - Poor quality images or lack sufficient training data may lead to inaccurate predictions.
  - Hardware Limitations such as high-quality camera, for reliable image analysis.
  - Environmental conditions such as angles, lighting may affect image accuracy.

Risk and Constraint
AI-Powered Vehicle Assessment

(a)

(b)
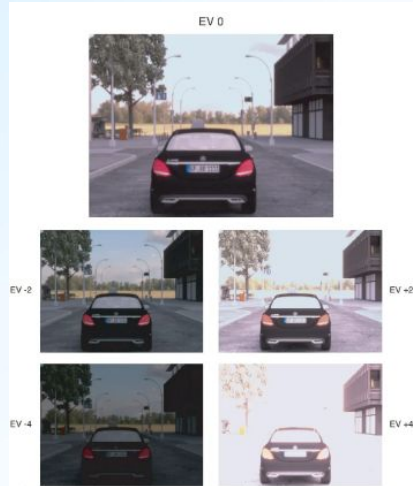
Picture 1. Illustration of bad lightning image
Source: (a) https://commonlands.com/blogs/technical/image-quality-and-computer-vision
and
Picture 2. Illustration of bad quality image
(b) https://commonlands.com/blogs/technical/image-quality-and-computer-vision

Conclusion

Conclusion

The implementation of computer vision in Livin' Auto aims to automate vehicle condition assessments for accurate loan valuations. By utilizing AI-powered image recognition, the system can detect damages, modifications, and wear from photos or videos submitted by users. This ensures a more transparent and precise loan approval process, reducing default risks and minimizing lender losses.

- **Advantages**
  - Automates inspections, reducing manual errors and fraud risks.
  - Provides accurate, data-driven vehicle valuations for fair loan pricing.
  - Enhances loan approval efficiency, benefiting both borrowers and lenders.

- **Challenges & Risks**
  Image quality issues, hardware constraints, and environmental conditions may affect AI accuracy and reliability

Thank you!

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