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Title:

Agricultural Image Captioning for Smart Farming

Problem Statement:

Develop a model that generates captions for agricultural images, describing crop types, growth stages, health status, and potential issues like pests or diseases.

- Identify what kind of plant it is (e.g., tomato, corn).
- Describe how grown the plant is (e.g., seedling, mature plant).
- Check if the plant looks healthy or if there are problems.
- Spot any issues like pests or diseases (e.g., bugs eating the leaves, signs of disease).

Business Use Case:

Farmers and agronomists can use this technology to monitor crop conditions, detect issues early, and optimize farming practices, leading to increased yields and reduced losses.

- For Farmers: They can easily monitor their crops without needing expert help all the time.
- For Agronomists: Helps in providing quick and accurate advice on crop conditions.
- Overall Benefit: This leads to better crop care, higher yields, and less crop loss due to unnoticed issues.

Dataset:

Kaggle: Plant Village Dataset

Link: PlantVillage Dataset (kaggle.com)

This dataset includes images of various plants with annotations for different diseases, useful for training models in agricultural image recognition and captioning.

Outcomes:

The project will develop a model to generate detailed captions for agricultural images, identifying crop types, growth stages, health conditions, and potential issues like pests or diseases. This technology will assist farmers and agronomists in monitoring crop health, detecting issues early, and optimizing farming practices, resulting in increased yields and reduced losses.