FOOD QUALITY DETECTION

PRESENTED BY: LOGESWARI. M

PROPOSED SYSTEM

THE PROPOSED SYSTEM USES MACHINE LEARNING TO DETECT FOOD SPOILAGE THROUGH IMAGE CLASSIFICATION.IT ELIMINATES MANUAL ERRORS AND PROVIDES ACCURATE PREDICTIONS IN SECONDS.IT IS SCALABLE AND CAN EASILY INTEGRATE INTO FOOD INDUSTRIES.

SYSTEM ARCHITECTURE

FOOD IMAGE CAPTURE → PREPROCESSING → MODEL PREDICTION → OUTPUT GENERATION

THE ML MODEL EVALUATES COLOR, TEXTURE, AND SPOILAGE FEATURES TO CLASSIFY THE FOOD.

DATASET DETAILS

THE DATASET INCLUDES IMAGES OF FRUITS AND VEGETABLES IN TWO CLASSES: FRESH AND SPOILED.IMAGES ARE COLLECTED FROM KAGGLE AND MANUALLY CAPTURED TO INCREASE VARIETY.
DATASET SIZE: 2000+ IMAGES WITH DIFFERENT LIGHTING AND SPOILAGE LEVELS.

TOOLS & TECHNOLOGIES USED

- PROGRAMMING LANGUAGE: PYTHON
- ML FRAMEWORKS: TENSORFLOW / KERAS, SCIKIT-LEARN
- IMAGE PROCESSING: OPENCV
- DEVELOPMENT ENVIRONMENT: JUPYTER NOTEBOOK / GOOGLE COLAB

IMAGE PREPROCESSING

- RESIZING IMAGES TO SAME SIZE
- REMOVING NOISE AND ADJUSTING BRIGHTNESS
- DATA AUGMENTATION (ROTATION, FLIP) FOR BETTER LEARNING ACCURACY

FEATURE EXTRACTION

- COLOR VARIATIONS
- DARK SPOT PRESENCE
- TEXTURE DISTORTION

SYSTEM WORKFLOW

USER UPLOADS IMAGE

IMAGE PREPROCESSING

CNN MODEL ANALYSIS

SYSTEM OUTPUTS FRESH / SPOILED WITH CONFIDENCE SCORE

➡ EASY-TO-USE PREDICTION SYSTEM

THANK YOU