DIAGNOSING PLANT LEAF DISEASES

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Agriculture is a $2.9 trillion industry worldwide, $179 billion from US.

On average, yield loss from plant disease estimated at 42% of total production

Corn, healthy

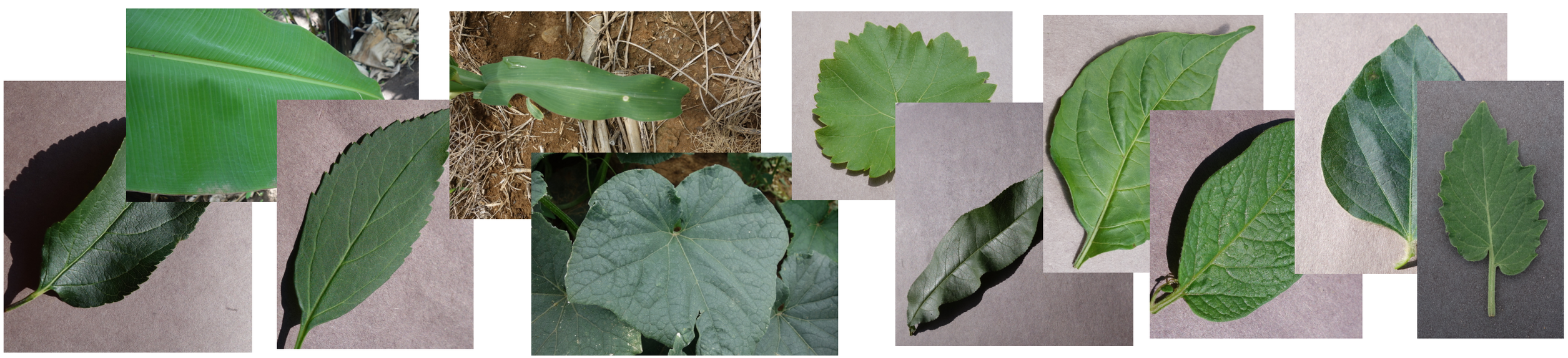
Northern Leaf Blight

Common Rust

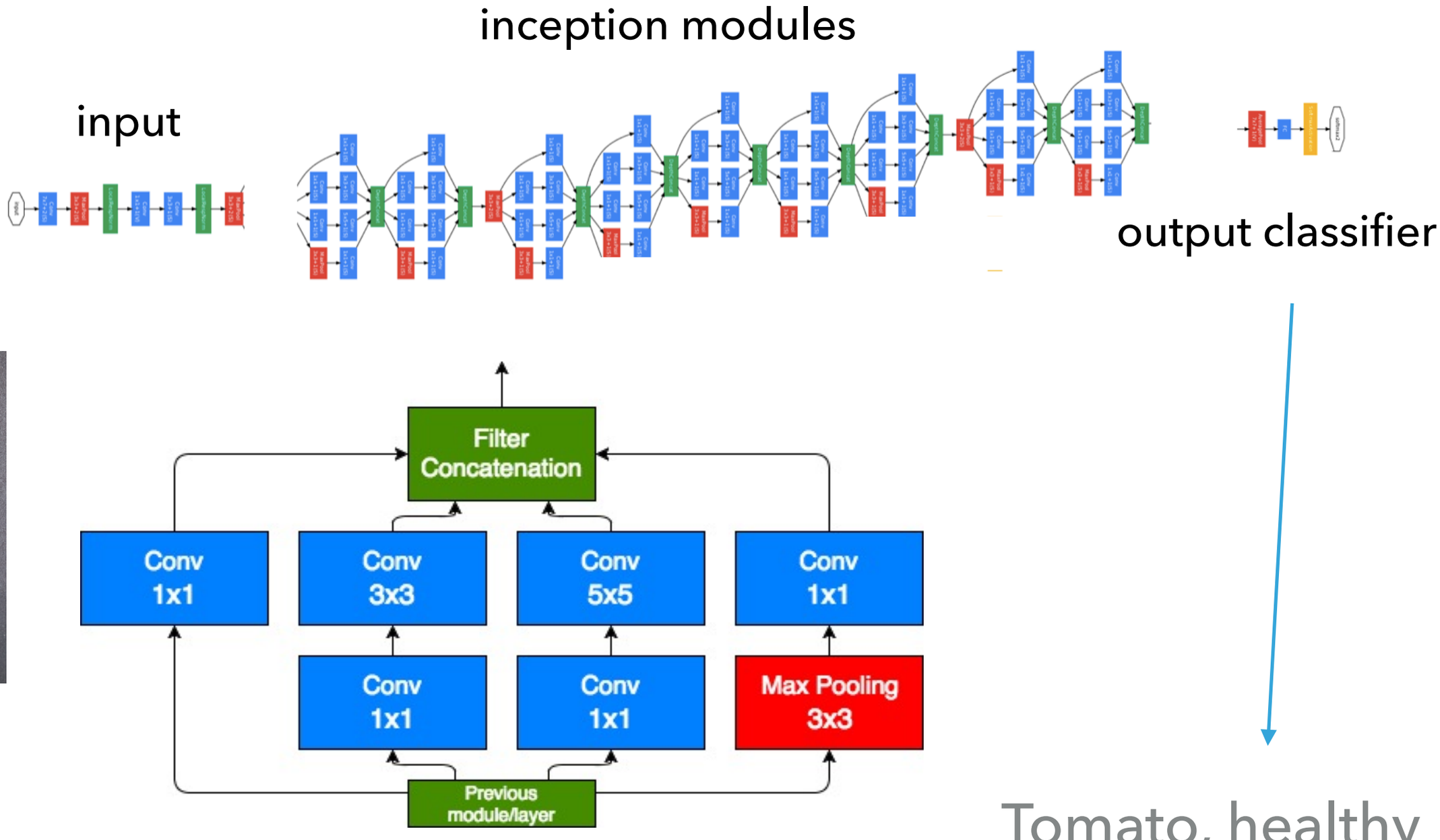
PROJECT OVERVIEW

- >70000 images / 46 total categories
  - 14 healthy crops
  - 32 diseased crops
- Train a Convolutional Neural Network (CNN)
- Model distinguishes crop variety and health status

- Apple
- Banana
- Bell pepper
- Cabbage
- Cherry
- Corn
- Cucumber
- Grape
- Peach
- Potato
- Soybean
- Squash
- Strawberry
- Tomato



INCEPTION V3



MODEL PERFORMANCE:
(46 TOTAL CATEGORIES)

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ACCURACY : 97%

Actual:

soybean, healthy

Prediction:

soybean, healthy (0.9524 confidence)

Actual:

cabbage, black rot

Prediction:

cabbage, black rot (0.9967 confidence)

Actual:

tomato, bacterial spot

Prediction:

tomato, yellow leaf curl (0.5270 confidence)

Actual:

tomato, bacterial spot

Prediction:

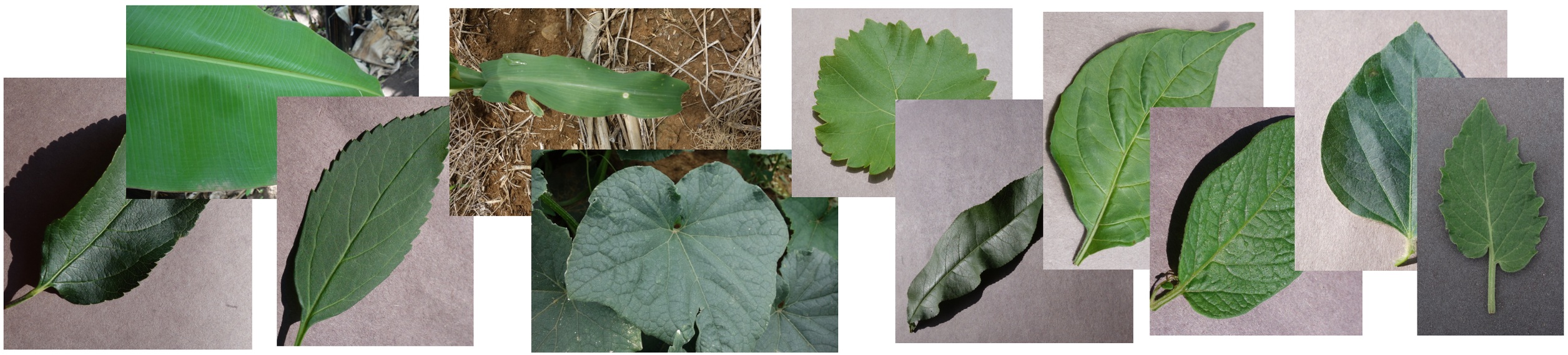
tomato, yellow leaf curl (0.5270 confidence)

bacterial spot

yellow leaf curl

FUTURE APPLICATIONS

- More crops/diseases
- Local wild flora
- Include disease information/treatment
- Large-scale agriculture deployment



THANK YOU FOR YOUR TIME!

METIS

PlantVillage

pandas

$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$

amazon web services

Flask
web development,
one drop at a time

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