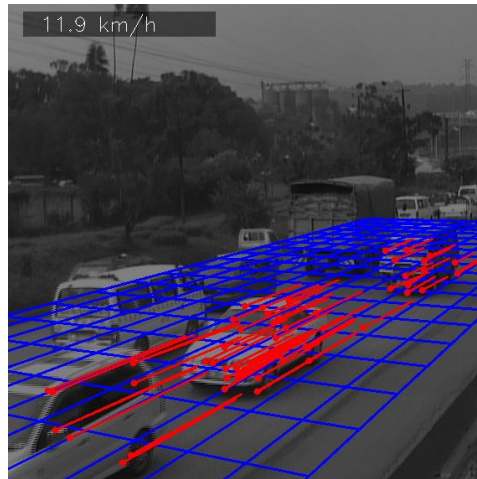
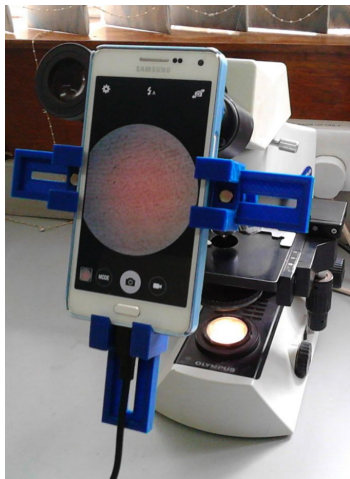


MLPR and Global Challenges

- Machine learning can be used to automate the decision-making processes of scarce human experts.
- Can be used to make inferences at population or global scale.



Crop disease monitoring

Information about infectious crop diseases in endemic regions is vital in order to plan interventions.



Uganda: Banana Wilt to Cause \$4 Billion Loss

By GRACE AGABA, 5 OCTOBER 2006

Kampala — UGANDA risks losing about \$4b (sh7.4 trillion) to the banana bacterial wilt by 2010 unless efforts to prevent the fast-spreading disease are put in place, banana experts have warned. The banana bacterial wilt spreads by drying banana plants. Researchers have discovered that the

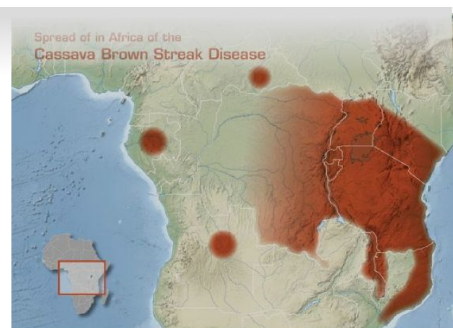


News From Bloomberg

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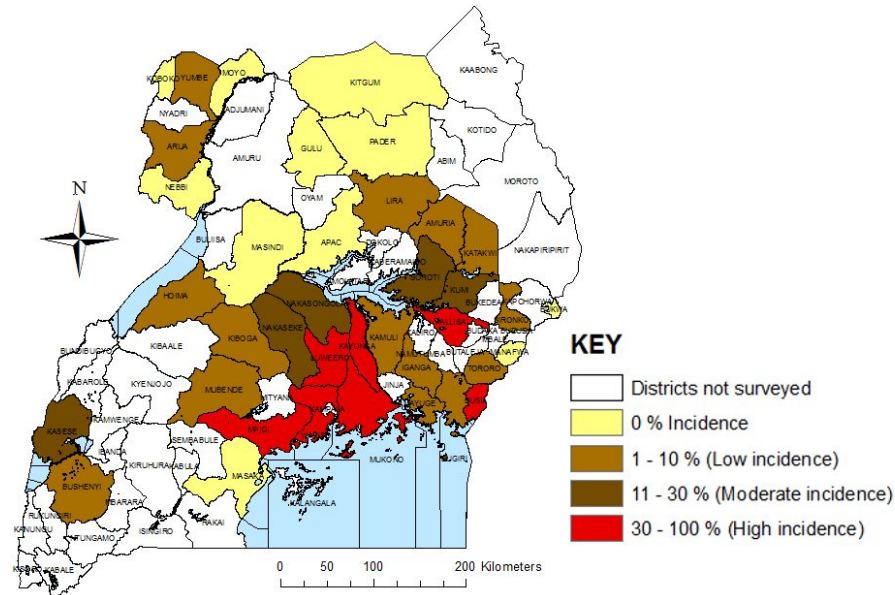
Bloomberg News

Cassava Brown Streak Disease Spreading to West Africa, FAO Says



Crop disease monitoring

Conventional survey methods are resource-intensive. It takes several months to produce a map like this:



Collecting information with mobile devices instead of paper speeds things up a lot:



Visual disease classification



kaggle



InClass Prediction Competition

Cassava Disease Classification

Classify pictures of cassava leaves into 1 of 4 disease categories (or healthy)

FGVC6

Fine-Grained Visual Categorization 6 · 87 teams · 5 months ago

[Overview](#)

[Data](#)

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[Rules](#)

[Join Competition](#)

Overview

Using machine learning, we can do two things in this problem context:

- Automate the diagnosis of individual plants.
- Infer the distribution of disease across the map.

In this lecture, we'll look at the mapping problem.