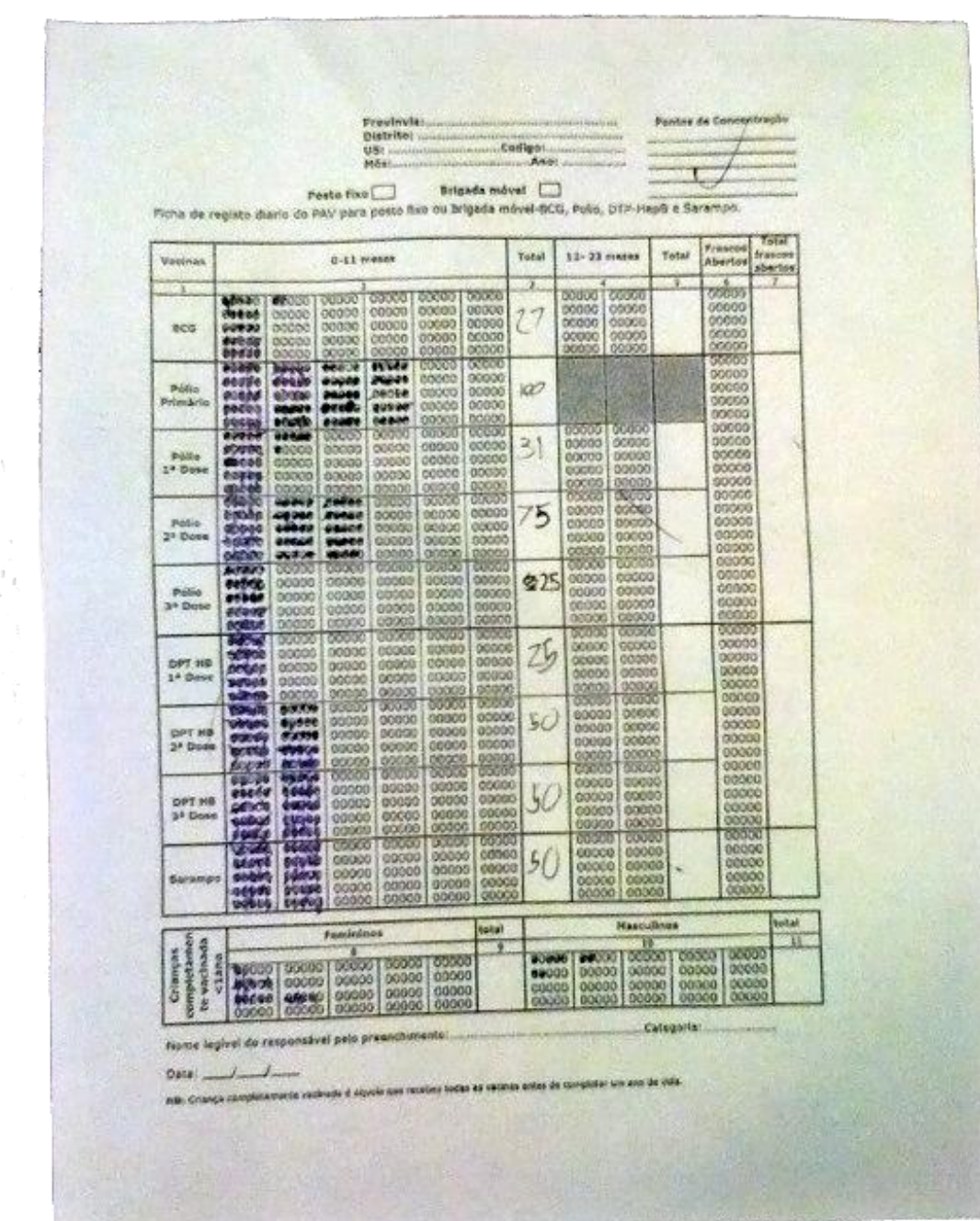


# Paper to DIGITAL

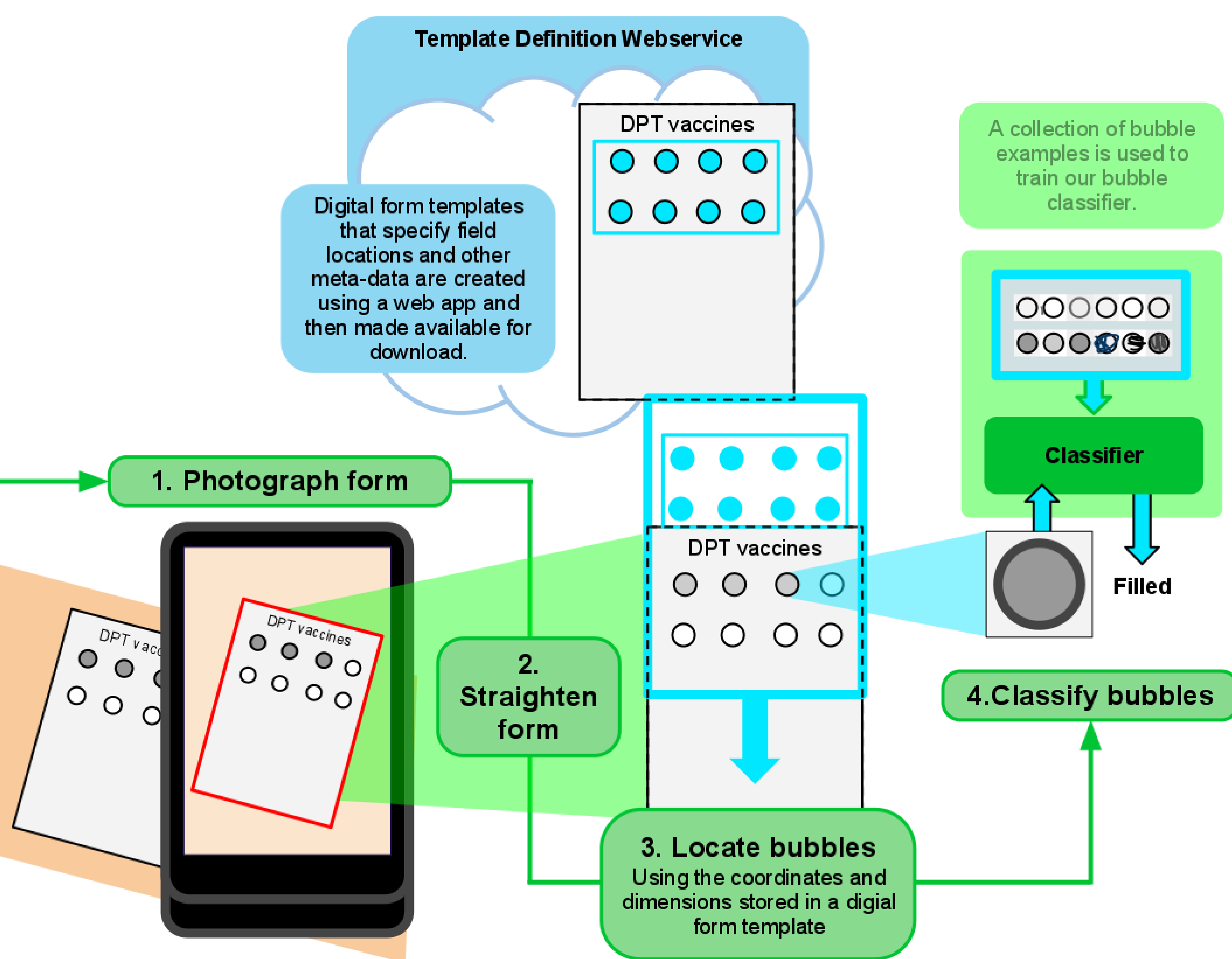
Nathan Breit, Baron Von Oldenburg, Steve Geluso, Aijia Yan

## Usage Scenario

- Rural health clinics in Mozambique need to gather data for inventory management and WHO monitoring
- They use paper forms which periodically need to be *hand* transcribed
- Using an electronic device for data capture will speed up data aggregation

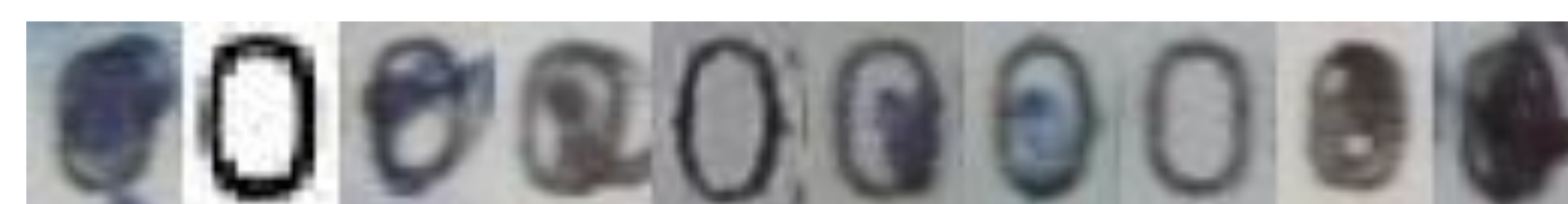


## System Architecture



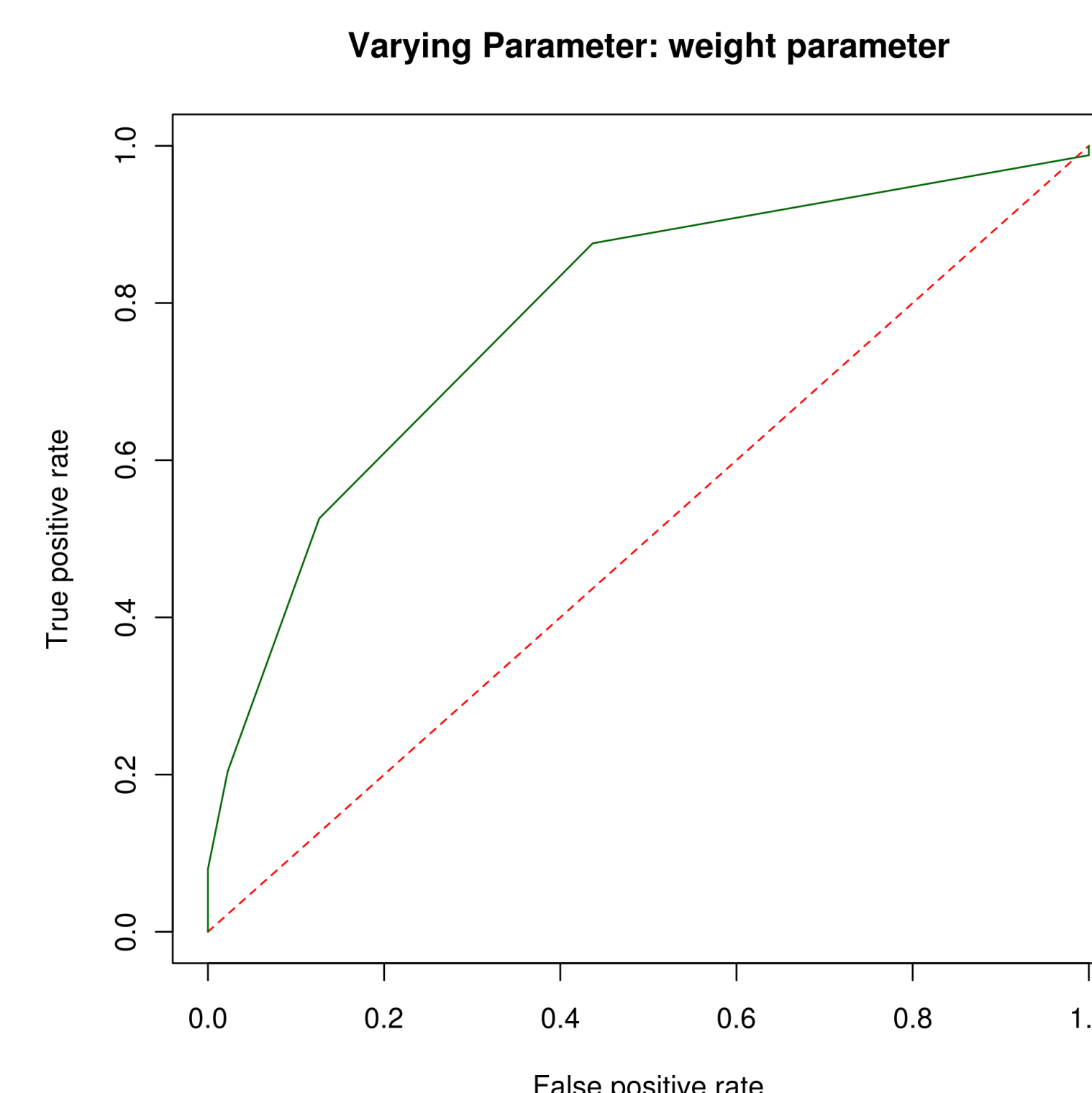
## Training Classifiers

- Bubble classifiers are trained with examples of filled and empty bubbles
- This training provides the basis for bubble detection in all forms



## Results

- A test suite creates ROC curves to measure classification accuracy
- Good classifiers make curves far to the left of the main diagonal



## Looking Forward

- Improve form straightening and alignment
- Compare phone camera with handheld scanner
- Rigorous testing of different bubble classifiers
- Scanning of handwritten numbers
- Interoperability; serializing data in standardized formats