Towards Weed Detection in the Cloud
Nasir Ahsan, Zhe Xu, and Salah Sukkarieh
Woody Weed Distribution Map
• Combine tree crown detection and classification
• 95% accuracy

Woody Weeds
MLA Project: Woody Weed Detection, Classification and Control
ACFR Aerospace Team

Weed Detection With Hovering Platforms
Unmanned Aerial Vehicle (UAV) → Aerial Images → Octo-photos → Georegistered classes → Supervised classification model

Alligator Weed Trial

Collected Images
• High Resolutions: 6000x4000 pixels (5 mm per pixel)
• Collected ~600 images during the 2 days trial

Ground Truth Training Labels
• Cut into 600x400 sub images
• Hand labels with feedback from DPI
• Class: Alligator Weed (yellow), Persicaria (Red), Grass (Green), others (blue)
Results

- Stitched and Geo-registered Image and Class Map

Case Study: Alligator Weed Detection

Nasir Ahsan   | Queensland Weed Symposium 13

http://youtu.be/vDI4bgI9KrY

Other Studies

Nasir Ahsan   | Queensland Weed Symposium 14

Recent Serrated Tussock Trial

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Classification Results at Higher Altitude

Nasir Ahsan   | Queensland Weed Symposium 16
ACFR Automated Pipeline

- Vision, Navigation and Training Data
- Labeled Training Data
- Aerial Images
- Learn Discriminating Features
- Classify Images
- Segment Weeds
- Geo-register Weeds
- Weed Location
- Information for Decision Making

Questions?

ACFR Automated Pipeline

13th Queensland Weed Symposium 2015