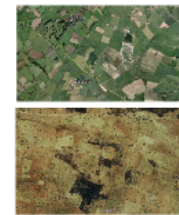
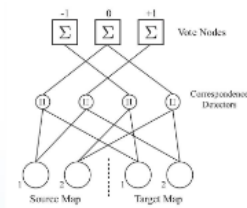
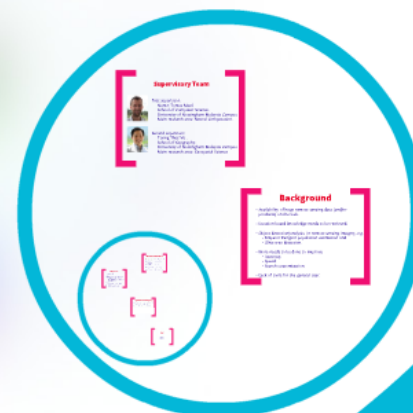
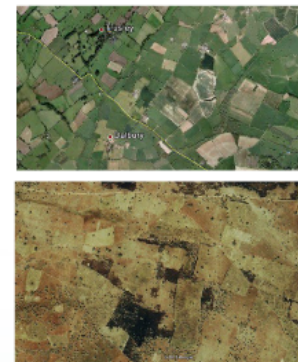
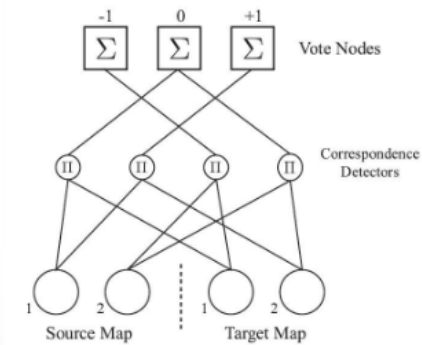




A web tool for customizable remote sensing imagery searches



A web tool for customizable remote sensing imagery searches



Supervisory Team



First supervisor:

Name: Tomas Maul.

School of Computer Science.

University of Nottingham Malaysia Campus.

Main research area: Neural Computation.



Second supervisor:

Tuong Thuy Vu .

School of Geography.

University of Nottingham Malaysia Campus.

Main research area: Geospatial Science

Background

- Availability of huge remote sensing data (and/or products) on the web.
- Location-based knowledge needs to be retrieved.
- Object detection/analysis in remote sensing imagery, e.g.
 - Emperor Penguin population estimation and
 - Olive tree detection.
- More needs to be done to improve:
 - Accuracy
 - Speed
 - Search customization.
- Lack of tools for the general user.

Objectives

Two main objectives:

1. Software:

Develop a tool for customizable remote sensing imagery searches. Focus on:

Different plant species, crop types and agricultural systems.

2. Science:

Advance the field of neuroevolution.

Fits well with CropBase objectives.

Approaches/Methodologies (1)

Machine learning approach: addresses generality & customization.

More specifically: evolutionary artificial neural networks (EANN).

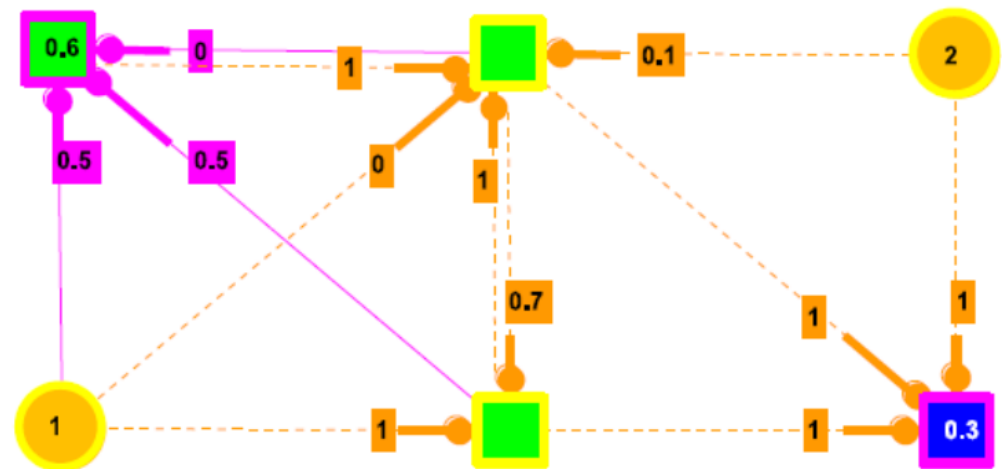
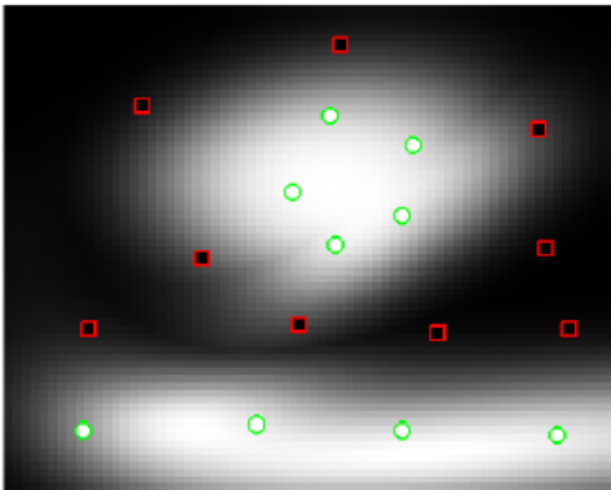
Combine EANN with more traditional Computer Vision approaches.

So far, no artificial system outperforms human performance when it comes to object recognition.

This is why a neural network approach is relevant.

Approaches/Methodologies (2)

We are working on a new type of hybrid artificial neural network (i.e. Neural Diversity Machines) which we believe will be able to solve the problem and advance the Neuroevolution field.



Q&A

Thank you.
Questions?