



Intelligent Systems

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Australia's largest intelligent systems research group

- **22 members**
- **Over \$6 million NCGs in 2006**
- **Data mining**
- **Optimisation and constraints**
- **Natural computing paradigms**
- **Computational modeling**
- **Natural language processing**

Our e-research manifesto

- **Modeling is a central activity in e-research**
 - Specifying models
 - Evaluating models specified by researchers
 - > Against data
 - > For internal coherence
 - Generating models from data
 - > Data mining
 - > Visualisation, exploration and analysis

Active engagement

- **Bioinformatics (VBC with Faculties of Science & Medicine and external)**
- **Natural Language interfaces for GeoScience**
- **Restoration of biomedical X-ray images with CSIRO**
- **Collection, sharing, visualisation & analysis of information from geographically remote areas vulnerable to tidal waves with Melbourne Uni**
- **Weather forecasting with Bureau of Meteorology**
- **Ecological risk assessment with Monash Water Studies and NSW EPA**
- **Mathematical models of collective decision making with Biology, U Syd**
- **Agent based models of economies with Monash Econometrics and CSIRO**
- **Genetics & evolution in landscapes with Biology, CSIRO, Uni of Otago (NZ)**
- **Simulation studies of formation of complex food webs with CSIRO Wildlife**
- **Models of environmental release of genetically modified organisms with ANU (CRES)**
- **Modeling landscape ecology with CSU Environmental Science**
- **Agent models of ancient civilizations with Geography & Arts**
- **Robotic systems for experimental data collection (Fac of Engineering)**
- **Analysis of synchrotron radiation data with Fac. of Science**

Capabilities

- **Data mining & visualisation**
 - Models from data
- **Modeling & simulation**
 - Work with experts to create, evaluate and refine models
- **Intelligent support for scientific process**
 - Collaboration & communication
 - Experimental support

Summary

- **We are here**
- **We are doing e-research**
- **We have expertise across the spectrum of modeling activities**
- **All we need to ramp up our e-research is funding!**