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Artificial Intelligence and Intelligent Agents Research Group, Bangor University

Dr. Bill Teahan
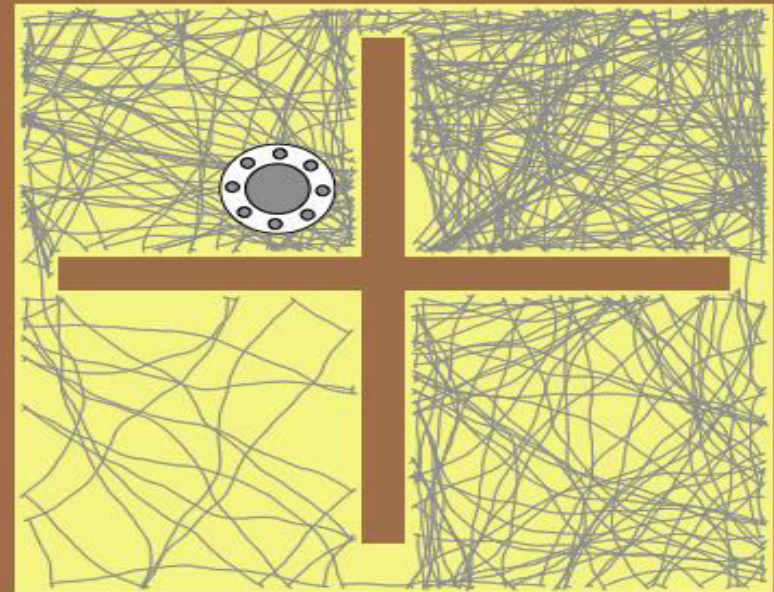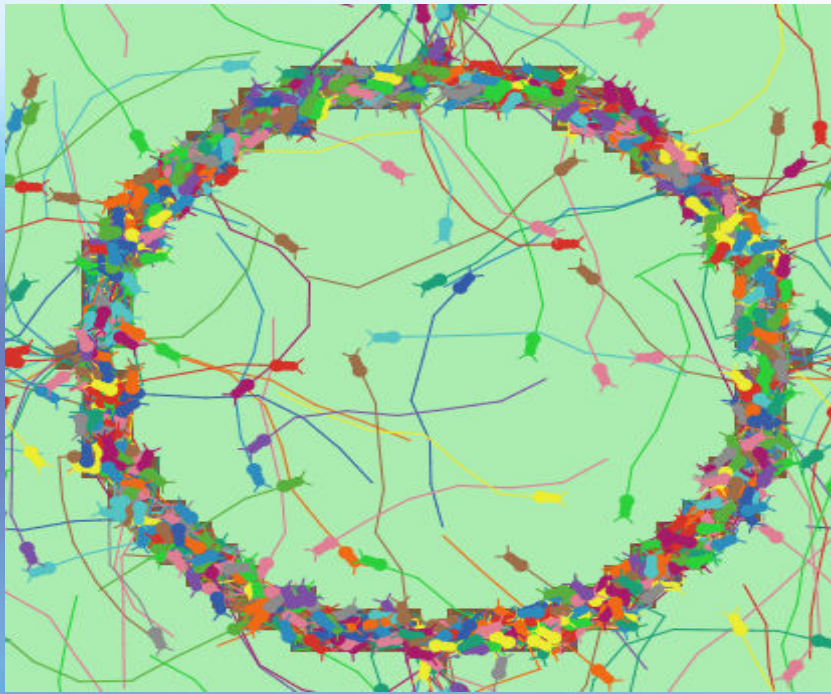
Some current research projects

- **Virtual Humans**
- **Virtual Creatures**
- **Novel evolutionary algorithms**
- **Simulation of natural and social phenomena using NetLogo**
- **NetLogo for E-learning**

W. Teahan, *Artificial Intelligence and Intelligent Agents Research Group, University of Wales, Bangor*
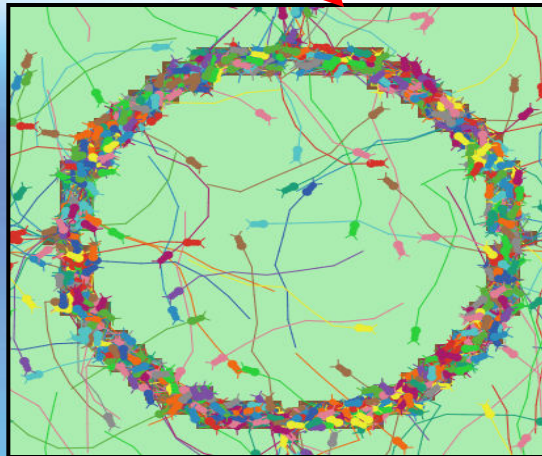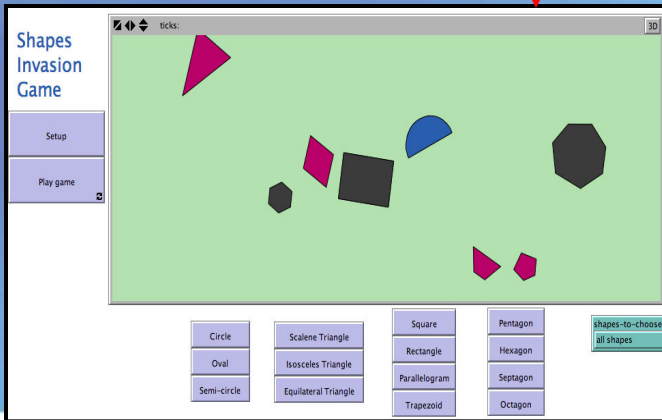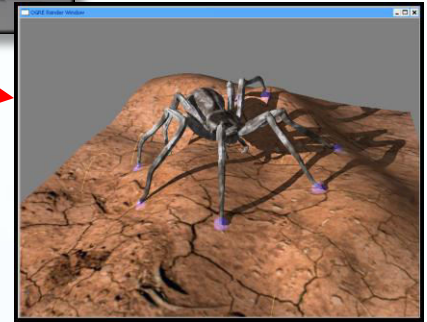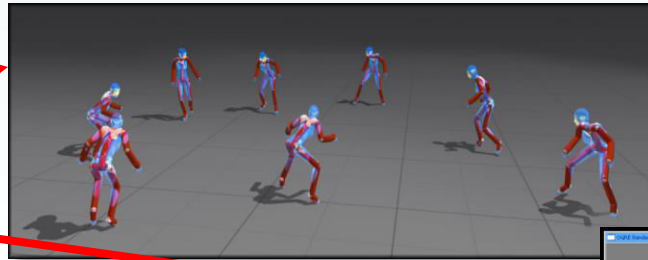
Virtual Humans Project

- **Realistic animation of virtual humans**

- **Develop effective conversational agents (Chatbots)**

- **Chatbot interface to Question Answering and Information Retrieval systems**

Many possible uses

**e.g. Avatars, Website Tour Guide, Computer Games, A.I. Research, E-learning etc.**

W. Teahan, *Artificial Intelligence and Intelligent Agents Research Group, University of Wales, Bangor*
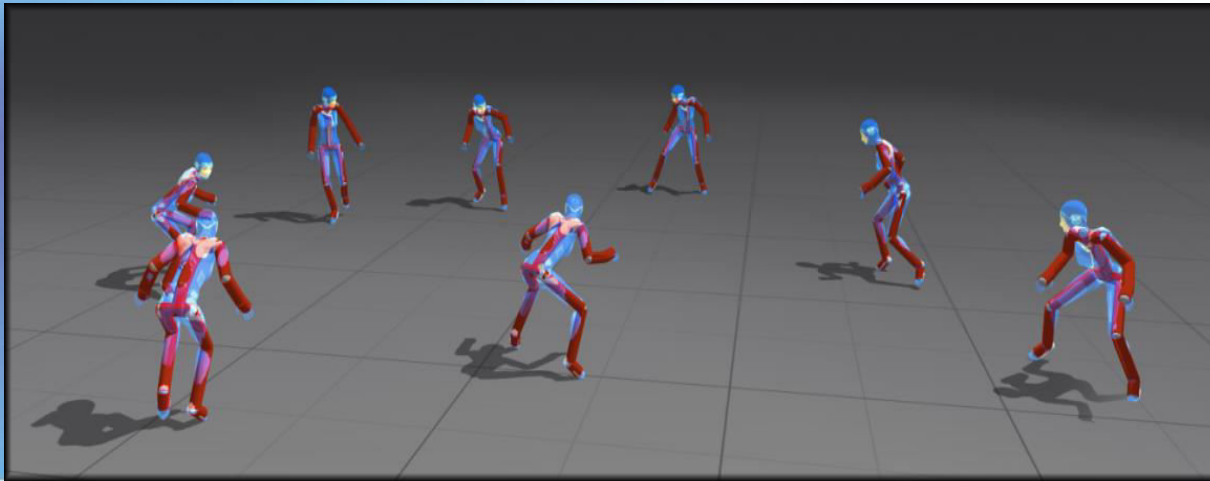
Virtual Creatures Project

- **Develop realistic virtual creatures (e.g. spiders)**
- **These creatures "exist" in a virtual environments**
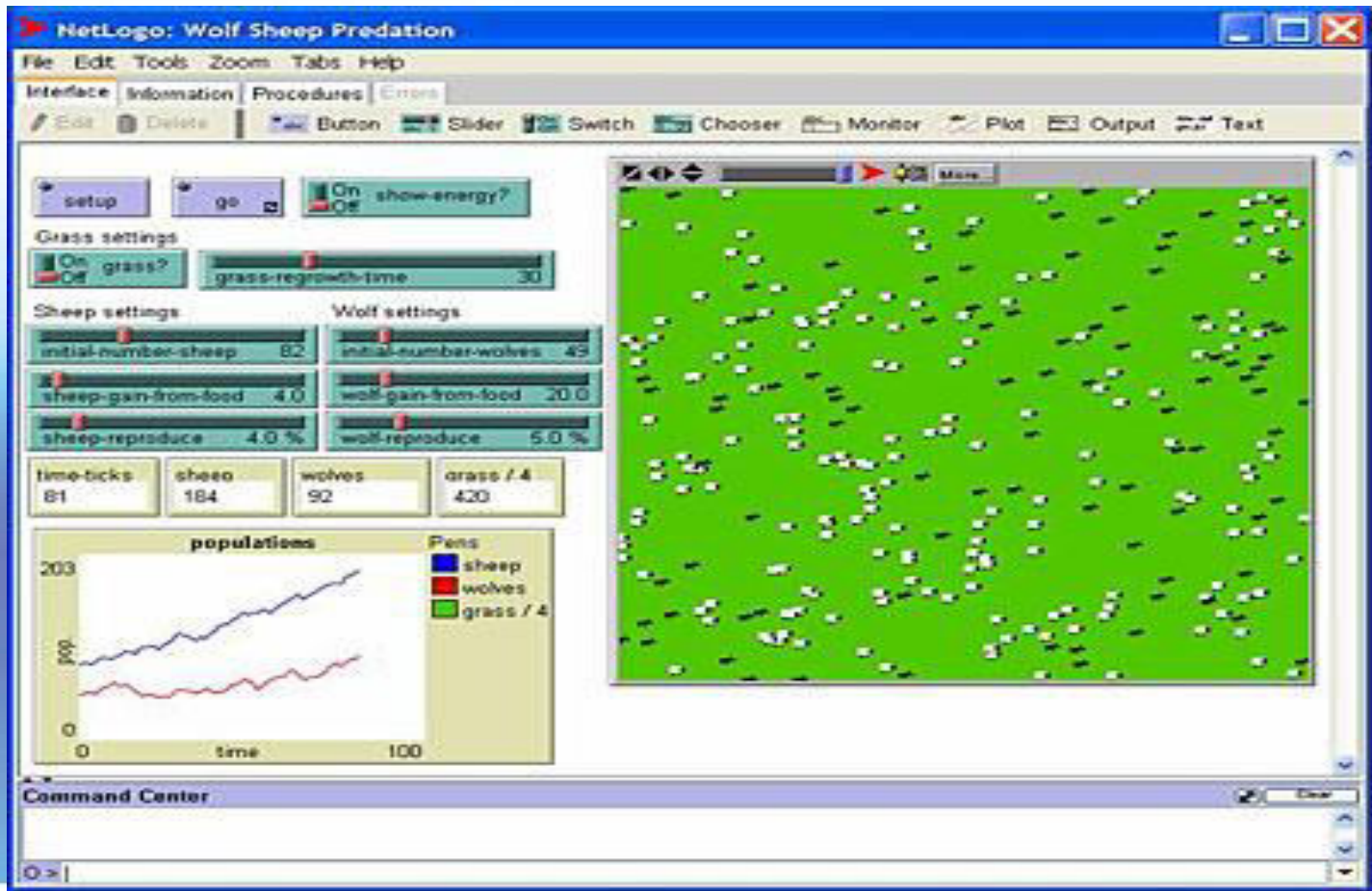- **They can sense and react to what they "see", "feel" in that environment**

Many possible uses
e.g. Phobia Therapy, Movies, Avatars, Computer Games, Artificial Life Research etc.
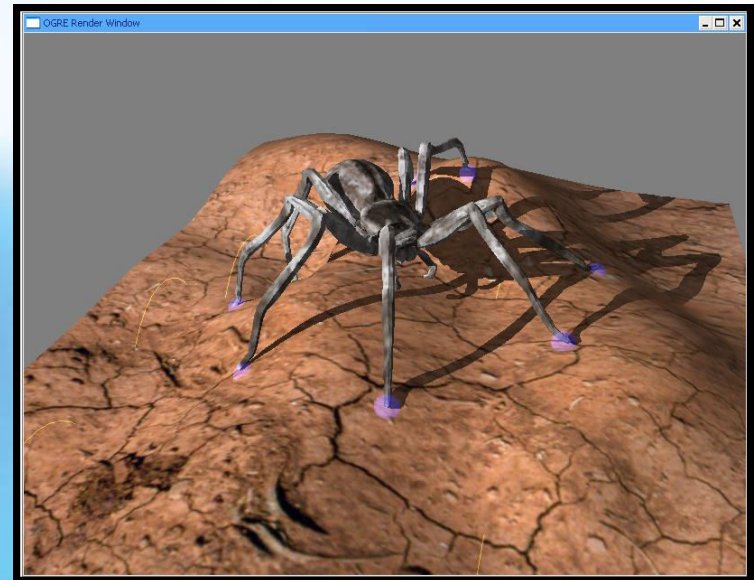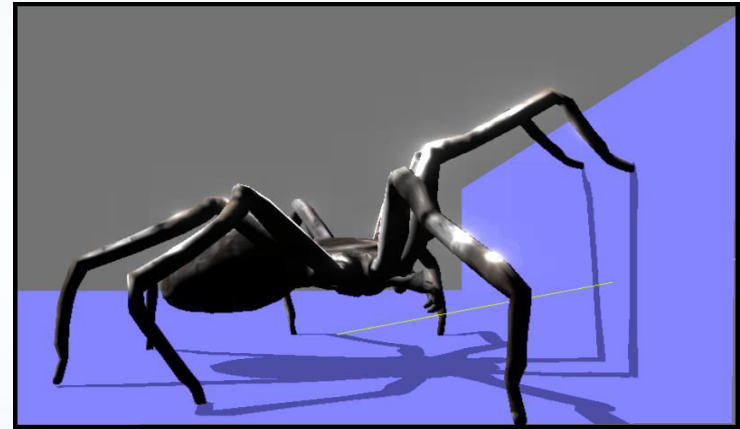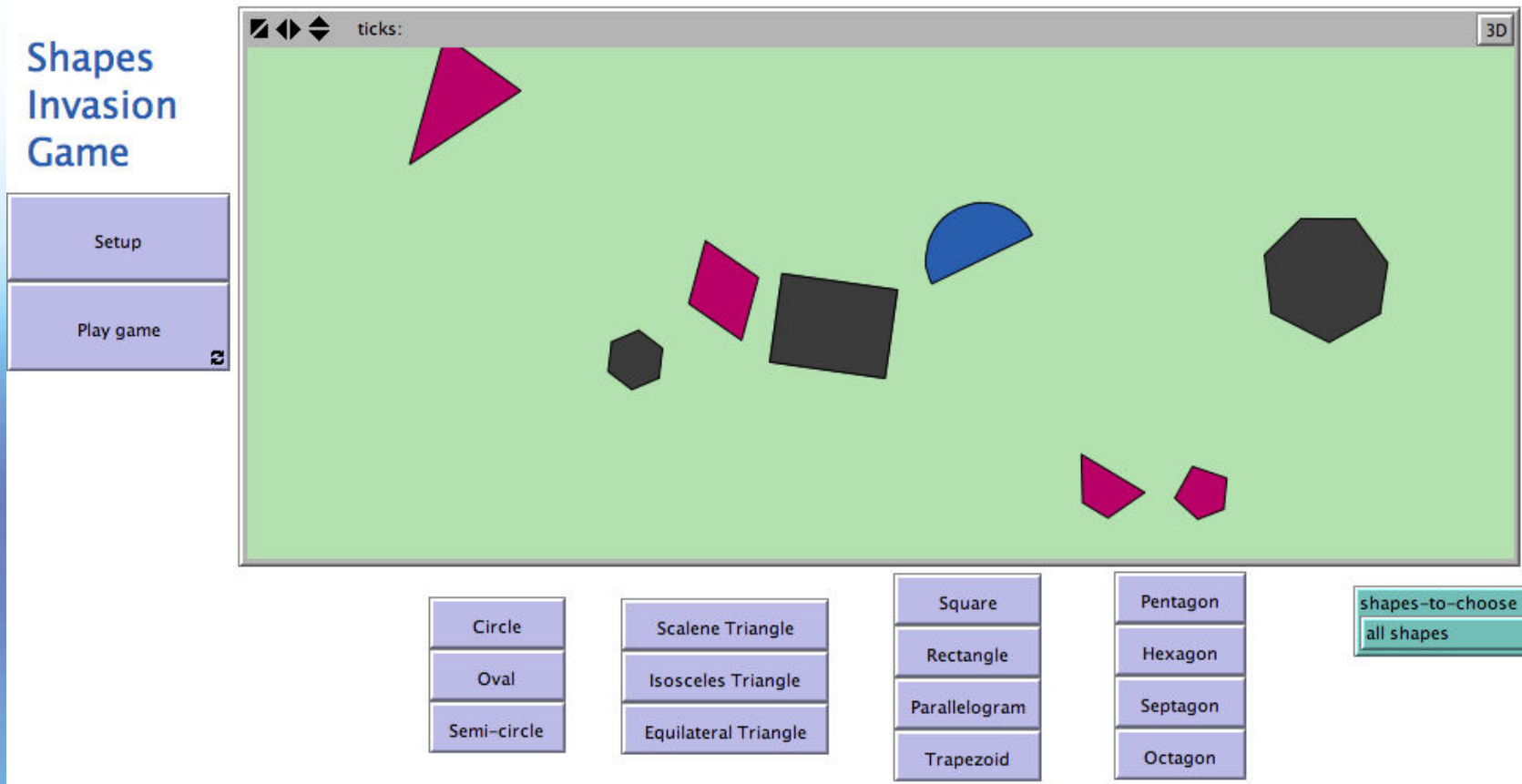
Simulations of natural & social phenomena & NetLogo

- **Agent-oriented programming language for rapid prototyping of simulations of natural and social phenomena**

W. Teahan, *Artificial Intelligence and Intelligent Agents Research Group, University of Wales, Bangor*

NetLogo for E-Learning

- **Develop models to teach Maths and other subjects to school children:**

NetLogo for E-Learning

- **Develop models to teach Maths and other subjects to school children:**

Animating AI:
An agent-oriented approach to teaching using NetLogo

- **Several NetLogo models have been develop to teach AI concepts and algorithms using basic animation techniques.**

- **These are available to use and download from files.bookboon.com/ai:**

NetLogo Models
Agent Animation
ANZ Continental Drift
Being Kevin Bacon
Cars Guessing Game
Central Park Events
Chatbot
Chevening House Maze
Chevening House Maze with Coloured Islands
Chevening House Maze with Wall Following
Colour Cylinder
Communication T-T Example 2
Crowd Path Following
Empty Maze
Empty Maze with Wall Following
Entropy Calculator
Firebreak
Flocking with Obstacles
Follow Trail
Follow and Avoid
Foxes and Rabbits
Foxes and Rabbits 2
Hampton Court Maze

NetLogo Models for Artificial Intelligence

These models were produced for the book series "Artificial Intelligence".

Author: W. J. Teahan; Email: wjteahan@gmail.com; Publisher: Ventus Publishing Aps, Denmark.

Model's name	Description
Agent Animation	This NetLogo model performs a simple animation of various turtle agent shapes to give the im... past the observer.
ANZ Continental Drift	This NetLogo model shifts New Zealand back towards Australia in order to illustrate the proces... the model is running time backwards in order to show where New Zealand was in relation to Au...
Being Kevin Bacon	This NetLogo model implements various algorithms related to communication amongst agents... algorithm, and communication via word-of-mouth or using blackboards. It also demonstrates s... the small world phenomenon, degrees of separation, and super-nodes in peer to peer networks...
Cars Guessing Game	This NetLogo model plays a simple game trying to guess the colour of cars as they drive past... entropy and code length calculations are made given a probability distribution.
Central Park Events	This NetLogo model visualises a sequence of events that are necessary for going from the Zo... Park, New York.
Chatbot	This NetLogo model implements two basic chatbots - Liza and Harry - using regular expression...
Chevening House Maze	This NetLogo model draws a schematic representation of the Chevening House garden maze.

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- ➢ **Data Mining in Genomics & Proteomics**
- ➢ **Proteomics & Bioinformatics**
- ➢ **Current Synthetic and Systems Biology**
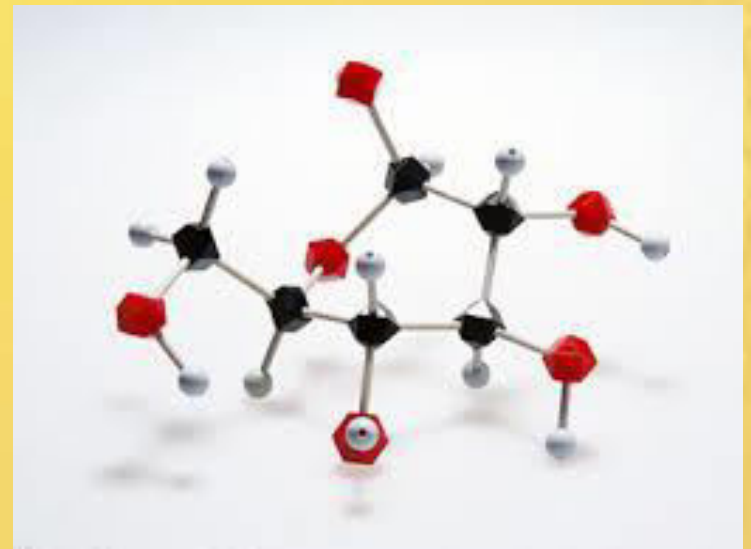
Journal of Computer Science & Systems Biology
Related Conferences

> **International Conference and Expo on Computer Graphics & Animation**

> **International Conference on Big data analysis and Data Mining**

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