

Artificial Intelligence Seminar

2001-2002

Schedule

Fall 2001

The NMSU Computer Science Department AI Seminar was started in the Fall of 2001 with the following goals:

- Provide a forum for interaction between Ph.D. students working in AI and interested faculty.
- Provide an opportunity for graduate students to practice speaking about research topics and to get feedback.
- Build and strengthen the AI group in the department.
- Provide an opportunity for new graduate students interested in AI to see what our department has to offer and get an idea of what is involved in Ph.D. level and post-doctoral research.

The seminar consists of weekly talks, or facilitated discussions, approximately one hour in length. The seminar drew participants and speakers, not only from CS, but from the Physical Science Laboratory, Computing Research Laboratory, Soils, Psychology, Computational Biology, and independent researchers.

Seminar organizer, Melanie Martin, maintains a web page at: <http://www.CS.NMSU.Edu/~mmartin/aiseminar.html>

Spring 2002

August 22 Melanie Martin
August 29 Melanie Martin
September 5 Melanie Martin
September 12 Nemecio Chavez
September 19 Nemecio Chavez
September 26 Discussion

October 3 Dan Tappan

October 10 Heather Pfeiffer
October 17 Don Dearholt

October 24 Jing He

October 31 Tim Jones
November 7 Discussion
Roger Hartley

November 14 Jason Robey
November 28 Joseph Pfeiffer

December 5 Carlos Gomez
Gallo

Spring 2002

January 14 Melanie Martin
January 28 Heather Pfeiffer
& Roger Hartley

February 4 Heather Pfeiffer
& Roger Hartley

February 11 Heather Pfeiffer
& Roger Hartley

February 18 Tom O'Hara

February 25 Tom O'Hara

March 4 Dan Tappan

March 11 Dan Tappan

March 18 Dan Tappan

April 1 Nemecio Chavez

April 8 Nemecio Chavez

April 15 Mia Kalish

April 22 Nemecio Chavez

April 29 AI Rodriguez

Donald W. Dearholt
October 17, 2001

The Cumulative Consensus of Cognitive Agents:
A Learning Algorithm for Structures in Semantic Memory

The Pathfinder paradigm utilizes pairwise estimates or measures of proximity to form a family of networks intended to model aspects of the associations within human semantic memory. This model supports clustering of similar concepts (and thus higher levels of abstraction) and minimum-cost paths, thus providing a well-defined associative structure to the concepts within a domain. Recently, a method of modeling dynamic phenomena by incrementally constructing a Pathfinder network based upon counting co-occurring concepts at each sampling time has been developed, utilizing a canonical scenario. This procedure can be viewed as computing the cumulative consensus over a set of adaptive agents, in which each agent has certain responsibilities for the storage of memories of the co-occurring phenomena. This learning algorithm transforms sequential phenomena into a Pathfinder network representation, and thus provides a candidate model for the transition from episodic to semantic memory in humans.

Joseph Pfeiffer
November 28, 2001

Visual Languages, Mobile Robots, and Uncertainty

For the past several years, I've been exploring the use of visual languages to express rule-based mobile robot programming. Recently, this effort has been directed toward the robot's sensors, and especially managing the uncertainty associated with those sensors. This talk will give an overview of the Isaac project, and show the use of Dempsey-Shafer belief management to handle sensor fusion.

Carlos Gomez Gallo
December 5, 2001

MARINA: A Conversational Agent

The idea that a system might hold an intelligent conversation with a human has been long an important aspect of research in artificial intelligence. Several programs have been written accomplishing different aspects of these conversational agents. At the same time, linguistic theory has identified several characteristics of dialogue modeling that need to be implemented if any conversational agent is to mimic human dialogues successfully.

In this talk, I will present a conversational agent named MARINA which is being developed at the CRL. I will show how it combines finite state automata (FSA) driven dialogues with a higher level engine that communicates with human users as well as other agents. This higher level engine compensates for some of the rigidity produced by the FSA. I will also present some of the properties in dialogue modeling and how these are being addressed by MARINA.

Organizing meeting

Identifying Ideological Point of View

Identifying Ideological Point of View II

The Egg Cracking Problem

The Egg Cracking Problem II

Supertoys Last All Summer Long

a story by Brian Aldiss

Reasoning in Natural Language

Processing

Wolves and Rabbits

The Cumulative Consensus of Cognitive

Agents: A Learning Algorithm for

Structures in Semantic Memory

Structural and Computational Biology:

A Multidisciplinary Approach

Aggie Intelligence

Intelligence without representation by

Brooks and Alternate Essences of

Intelligence by Brooks, et.al.

PSL Agent Modeling Group

Visual Languages, Mobile Robots, and

Uncertainty

MARINA: A Conversational Agent

Organizing meeting - Survey Results

Data Models for Conceptual Structures

Data Models for Conceptual Structures II

Data Models for Conceptual Structures III

Overview of Cyc (Knowledge Base and

Inference Engine)

Thematic roles in Cyc versus Conceptual

Structures

Intelligent Agents

Intelligent Agents II

Intelligent Agents III

Inheritance Theory

Inheritance Theory II

Bleeding Edge Teaching Technologies:

Pushing the Envelope of the Language-

Graphics Interface

Inheritance Theory III

Language of Mi (LOM), a spoken

computer language