INTRODUCTION

DEVELOPMENT

ARTIFICIAL INTELLIGENCE APPLICATION
Objectives

Mastery of Python, a popular programming language useful for AI applications

Application building using paradigms of AI programming

Familiarity with full-scale versions of the same applications

Ability to build simple versions of a few AI applications

Tions and rapid prototyping
from tokenizers to intelligent email agents

Applications

Python

more

regular expressions, rule systems, grammars, probability, automata, and

knowledge-based and statistical

Methodologies, Tools and Languages

others tailored to class interests

machine learning

natural language processing

Advanced AI Topics

Major Topics of this Course
Artificial Intelligence

Artificial Intelligence involves studying formal representations, and algorithms for their manipulation.

Artificial Intelligence (AI) is primarily concerned with understanding and building intelligent entities. It is one of the newest (since 1956) and oldest (since 4000 BC) disciplines.
object-oriented

Support for good programming style

"executable pseudocode"

Self-documenting code

interpreted, with no compilation step

Support for rapid prototyping

designed to be easily learned

Shallow learning curve

Python
to be easily combined

standard and consistent interfaces precisely define tasks and allow tasks

ules, building systems

permits student projects at various levels (tweaking modules, writing mod-

advanced tasks are possible from an early stage

A software package for manipulating text and performing AI/NLP tasks

NLP: Python-based Courseware
Reference documents give precise explanations

Tutorials provide gentle introductions

- Visualization
- Classifying
- Parsing
- Tagging
- Probability modeling

Processing techniques (tokenizing, parsing, ...)

Data types (tokens, trees, ...) many tasks common to NLP and AI

Python Modules define standard interfaces and sample implementations

**NLTK Contents**
Detect disease outbreaks
Recognize opinions in the world press
Access the web over the telephone
Tutor students in areas such as physics

Sample Pit Applications
Demos

• Tic Tac Toe (http://www.geocities.com/chern-levkovitch/tictactoeegame.html)

Games

• Babelfish (babelfish.altavista.com)

Machine Translation

• Ask Jeeves (www.ask.com)

• AnswerBus (misschaoover.si.umich.edu/~zhenheng94/new)

Question Answering

• ELIZA (www-ai.ijs.si/eliza/eliza.html)

Dialogue Systems
Who should be here
Requirements
Web page
Textbook
Professor
Administration
Office Hours TBA

• liman@cs.pitt.edu
• 741LRD, (412) 624-1261
• 5105 Slennett Square, (412) 624-8838

Contact Information

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• Faculty, Intelligent Systems Program
• Research Scientist, LRDC
• Associate Professor, Computer Science Department

Affiliations

Dr. Diane Litman
http://www.cs.pitt.edu/~ltizman

Homepage

Strandling Dialogues

Simulation and Discourse Analysis: An Integrated Approach for Under-

1986: PhD, Computer Science, University of Rochester (Plan Recognition)

1990-1992: Assistant Professor, Computer Science, Columbia University

1985-2001: Technical Staff, ATR Principles Research Department, AT&T

2001-Present: University of Pittsburgh

Background

LTizman, cont.
- plan recognition
- knowledge representation
- user modeling and personalization
- machine learning applications

Other Artificial Intelligence


Speech and Natural Language Processing

Research

Lismar, cont.
TBA

Office Hours

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Contact Information

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Teaching Assistant
Who are you?
Selections from other textbooks

Learning Python (Help for Programmers) by Mark Lutz and David Ascher
NOTE: involves viewing/printing postscript, pdf, ppt, etc.

- announcements
- lecture notes
- assignments
- readings
- topics

Syllabus

www.cs.pitt.edu/~litman/courses/cs1573/1573.html

URL
Class Participation

Email Filtering Project (Programming, paper, and presentation)

Homeworks (problem sets, writing and using programs)

Readings (before class)

Requirements
1571 plus

• Prior knowledge of Python not assumed
• Background in computer science
• Ability to write and use programs

An interest in Artificial Intelligence, and...
on your findings

- Find an interesting Applied Intelligence or demo, and be prepared to report back

Assignment

- Send me email for a class mailing list
- Simple Python exercises due in one week
- Read Lutz and Ascher 1-2
- Get a CSSD account
- Begin Self-Study Python Module

(Re)Read Chapter 1 from Artificial Intelligence: A Modern Approach

FOR NEXT TIME
Goals:

Operating Systems:

Programming Languages:

Relevant Courses:

Major:

Year:

Department:

Email:

Name:

Survey