South-Eastern Finland
University of Applied Sciences

ELEMENTS OF ARTIFICIAL INTELLIGENCE
3 ECTS, (6.- 17.7.2020)

Dr. Laura J. White, instructor

Learning outcomes

- Describe primary concepts related to AI
- Identify and explain relationships between AI and strongly related disciplines
- Discuss the history of AI
- Evaluate programming languages used in AI
- Solve search and planning problems with perfect information
- Formulate a real-world problem as a search problem
- Formulate a simple real-world game problem as a game tree
- Use searching to solve problems with uncertain information
- Use odds and probabilities to solve AI problems
- Solve problems using Bayes rule and Bayes naive classification
- Define machine learning
- Describe how machine learning is used to solve AI problems
- Use the nearest neighbor classifier technique to predict user behavior
- Describe characteristics of decision trees in machine learning
- Solve machine learning types of problems using linear and logistic regression
- Define neural networks
- Explain how neural networks are used to solve AI problems
- Describe how perception is used in AI problems
- Evaluate the relationship between robotics and AI
- Discuss the philosophy and the future of AI

Content

Introduction to AI
Problem Solving with AI
Searching and Probabilistic Reasoning
Machine Learning
Neural Networks
Perception
Robotics
Philosophy of and the future of AI

Assessment

100% attendance is compulsory. Course grade will be derived 30% from grades on individual and team exercises, and 70% from grade on final exam. 100% attendance is required to take the final exam and to take a resit exam. A

minimum score of 40% on the final exam is required to pass this course.

Grading Scale, i.e.
89 – 100% = 5 (Excellent)
77 – 88% = 4 (Very good)
65 – 76% = 3 (Good)
53 – 64% = 2 (Highly satisfactory)
40 – 52% = 1 (Satisfactory)
0 – 39% = 0 (Fail)

Prior know-how and skills

None

Co-requisites

None

A brief cv of the lecturer

Lives in California, USA

Work History

2015-Present Professor Emeritus, University of West Florida

1992-2015 Associate Professor, University of West Florida

1972-1992 U.S. Navy

1970-1972 Veterinary Assistant

Education

1984 BS Computer Engineering, University of New Mexico

1989 MS Computer Science/Software Engineering, Navy Postgraduate School

2005 PhD Instructional Design, Capella University