
Course Syllabus Artificial Intelligence

Graduate School of Engineering Technology
Politeknik Elektronika Negeri Surabaya

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Course Attributes

Nama	Artificial Intelligence, Master Program, Informatics & Computer Engineering
sks	2 Credits, Theory
Durasi	50" x 2 hours / week
Bekal Pengetahuan	Statistics and Probabilistics, Programming Languages
Media Pembelajaran	• Hardware → PC/Laptop, LCD Projector
Asesmen (%)	Mid-Test (30-35 %), Final-Test (35-40 %), Assignment (25-30 %)

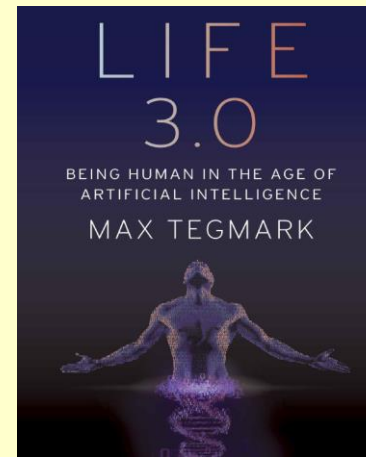
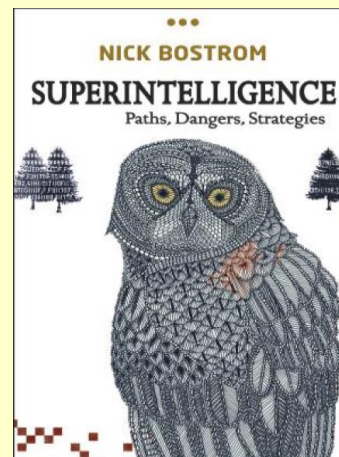
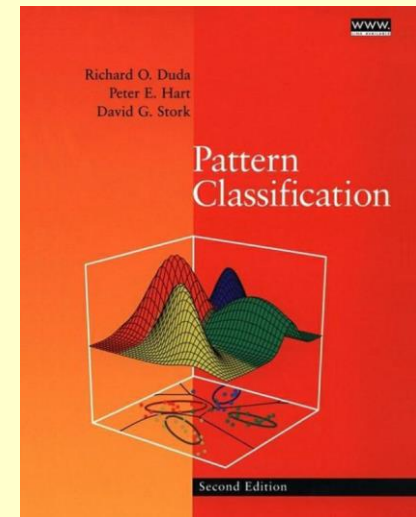
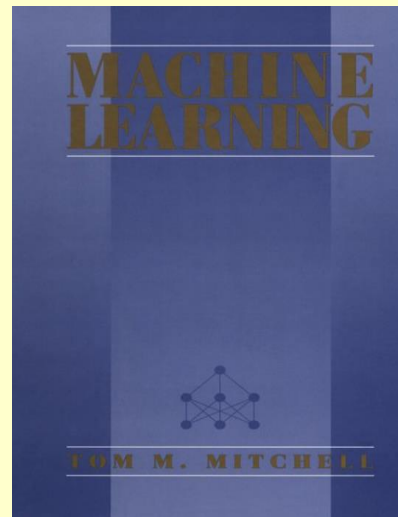
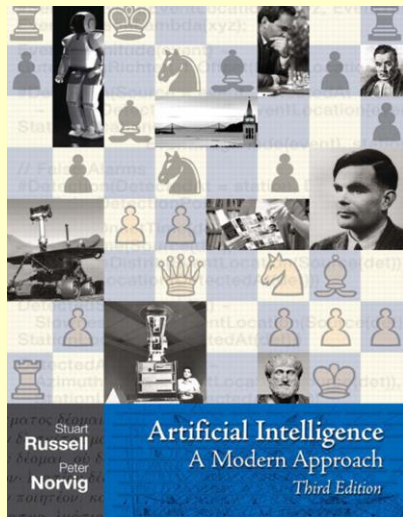
Course Description

- In daily language, the term "artificial intelligence" is applied when machines articulate "cognitive" functions that humans associate with the human mind, such as "learning" and "problem-solving."
- The study of intelligent agents that perceive their environment and take actions to maximize their chances of successfully achieving their goals.

Outlines of Course

- Introduction to AI
- State search and optimization
- Fuzzy Logic
- Optimization Problem, Genetic Algorithm
- Introduction to concept learning, classification, nearest neighbors & categorical data
- Learning: identification trees
- Learning: Neural nets, perceptron, deep learning
- Learning from environment, Reinforcement Learning

Main Book References



Additional
Books

Main Syllabus References

- Artificial Intelligence, MIT Open Course Ware
- Artificial Intelligence, MIT Computer Science and Artificial Intelligence Laboratory
- Syllabus for CS 182 Artificial Intelligence, Harvard University
- CS221: Artificial Intelligence: Principles and Techniques, Stanford University
- COS 402 Machine Learning and Artificial Intelligence, Princeton University
- CSC.T272 Artificial Intelligence, Open Course Ware, Tokyo Institute of Technology
- Bhagath Sivadasan, Application of Artificial Intelligence in Electrical Engineering, Global Research and Development Journal for Engineering, March 2018.
- Hasmat Malik, Shafqat Mughal, R.K.Jarial, Y.R. Sood, Application and Implementation of Artificial Intelligence in Electrical System, Conference on advances in computing and communication(ICACC-2011)IEEE-MTTS (499-505), January 2011.

Course Discussion

Minggu	Bahan Kajian	Minggu	Bahan Kajian
1	Introduction to Artificial Intelligence	9	Clustering & Cluster Analysis
2	State Search & Algorithms	10	Neural Networks (Basic Concepts, Single Perceptron)
3	Fuzzy Logic	11	Neural Networks (Multi Perceptron)
4	Optimization Problem & Genetic Algorithm	12	Case Study: Multi Perceptron Classification (7-Segment, Digit Recognition)
5	Introduction to Concept Learning & Classification	13	CNN & Deep Learning
6	Categorical Data Classification (Decision Tree)	14	Case Study: Deep Learning (Image Classification)
7	Validation Model of Classification Analysis	15	Reinforcement Learning
8	Mid-Test	16	Final-Test