EEE5201

Introduction to autonomous systems, architecture of

autonomous systems, control of robotic manipulators,

machine vision, the dynamics of wheeled, air, space and

underwater robots, navigation and localization. Autonomous

Satellite Control

Introduction to artificial intelligence, Intelligent Agents,

Problem solving and search: problem formulation; search

space; states vs. nodes; tree search: breadth-first, uniform cost,

depth-first, depth-limited, iterative deepening; graph search.

Informed search: greedy search; A\* search; heuristic function;

admissibility and consistency; deriving heuristics via problem

relaxation. Evolutionary algorithms, Machine learning,

Supervised Learning, Unsupervised Learning, Reinforcement

Learning, Support vector, Artificial neural networks

Artificial Intelligence: A Modern

Approach (3rd edition), S.J. Russell and

P. Norvig. Prentice-Hall, 2010.

2. Introduction to Autonomous Mobile

Robots, second edition, by Roland

Siegwart, Illah Reza Nourbakhsh and

Davide Scaramuzza, Published: February

18, 2011, Publisher: The MIT Press

3. Verifiable Autonomous Systems: Using

Rational Agents to Provide Assurance

about Decisions Made by Machines.

Dennis, L.A. and Fisher, M., 2023.

Cambridge University Press.

4. Artificial intelligence: a guide to

intelligent systems. Negnevitsky,

Michael. Pearson education, 2005.

