CONTROLLER DESIGN AND SIMULATION OF ARTIFICIAL NEURAL NETWORKS TO HOVER IN MOTION CONTROL HELICOPTERS

By: R. Ade Supriyadi
Student Identity Number: 2207202203
Supervisor I: Ir. Katjuk Astrowulan, MSEE.
Supervisor II: Ir. Rusdhianto Effendie AK., M.T.

ABSTRACT

Hover on the helicopter, a vertical motion with horizontal velocity below the speed specified tolerance. Hover control is based on the velocity obtained from the application of force and moment and the state of the environment. In the achievement of the desired speed, it takes information about the speed and direction towards the actual. Also needed information on the stability of the helicopter during implementation of the achievement of the desired speed.

Hover speed control using artificial neural network learning approach requires, which is used here included back propagation, the principle of reinforcement learning, as well as search strategies breadth-first search.

The result of this research is the development of artificial neural network learning algorithm and mathematical simulation tools that can be used as a reference in understanding the control performance using artificial neural networks, especially in a helicopter hover control.

Keywords: hover, control, helicopter, velocity, artificial neural network, stability, reinforcement learning.