



Autonomous Defensive Space Control via On-Board Artificial Neural Networks

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Biblioscholar Nov 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x3 mm. This item is printed on demand - Print on Demand Neuware - Future advances in neural network technology, coupled with increased computer processor capability, may create an opportunity to develop systems that enable satellites to autonomously differentiate, detect and defend against attacks. The Air Force should take advantage of this potential opportunity by investing the necessary resources for the development of space-based neural networks. An artificial neural network (ANN) or commonly just neural network (NN) is an artificial intelligence system created to mimic the ways and methods in which our own brains respond to and learn from inputted stimuli.¹ Each of these networks consists of an array of neuron-like gates programmed to take action once a designated threshold is crossed.² These ANN are adaptive, and learn through continued processing of inputted stimulus while developing a memory by storing the actions it takes in response to this stimulus.³ This memory gained through storing data enables ANNs to become somewhat autonomous over time because they have the ability to recall a given action taken based on a given input received. 52 pp. Englisch.



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