SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution
Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF MCA

19CAT703 – MACHINE LEARNING

II YEAR III SEM

UNIT I – FOUNDATIONS OF LEARNING

TOPIC 3 – Grouping and grading – Learning Vs Design

Grading vs grouping is an orthogonal categorization to geometric-probabilistic-logical-compositional.

1. Grouping models break the instance space up into groups or segments and in each segment apply a very simple method (such as majority class).

E.g. decision tree, KNN.

2. Grading models form one global model over the instance space.

E.g. Linear classifiers – Neural networks

The design choices will be to decide the following key components:

1.   Type of training experience

2.   Choosing the Target Function

3.   Choosing a representation for the Target Function

4.   Choosing an approximation algorithm for the Target Function

5.   The final Design

Type of training experience

1.   Direct or Indirect training experience.

2.   Teacher or Not

3.   Is the training experience good

Choosing the Target Function

1.   During the direct experience

2.   When there is an indirect experience
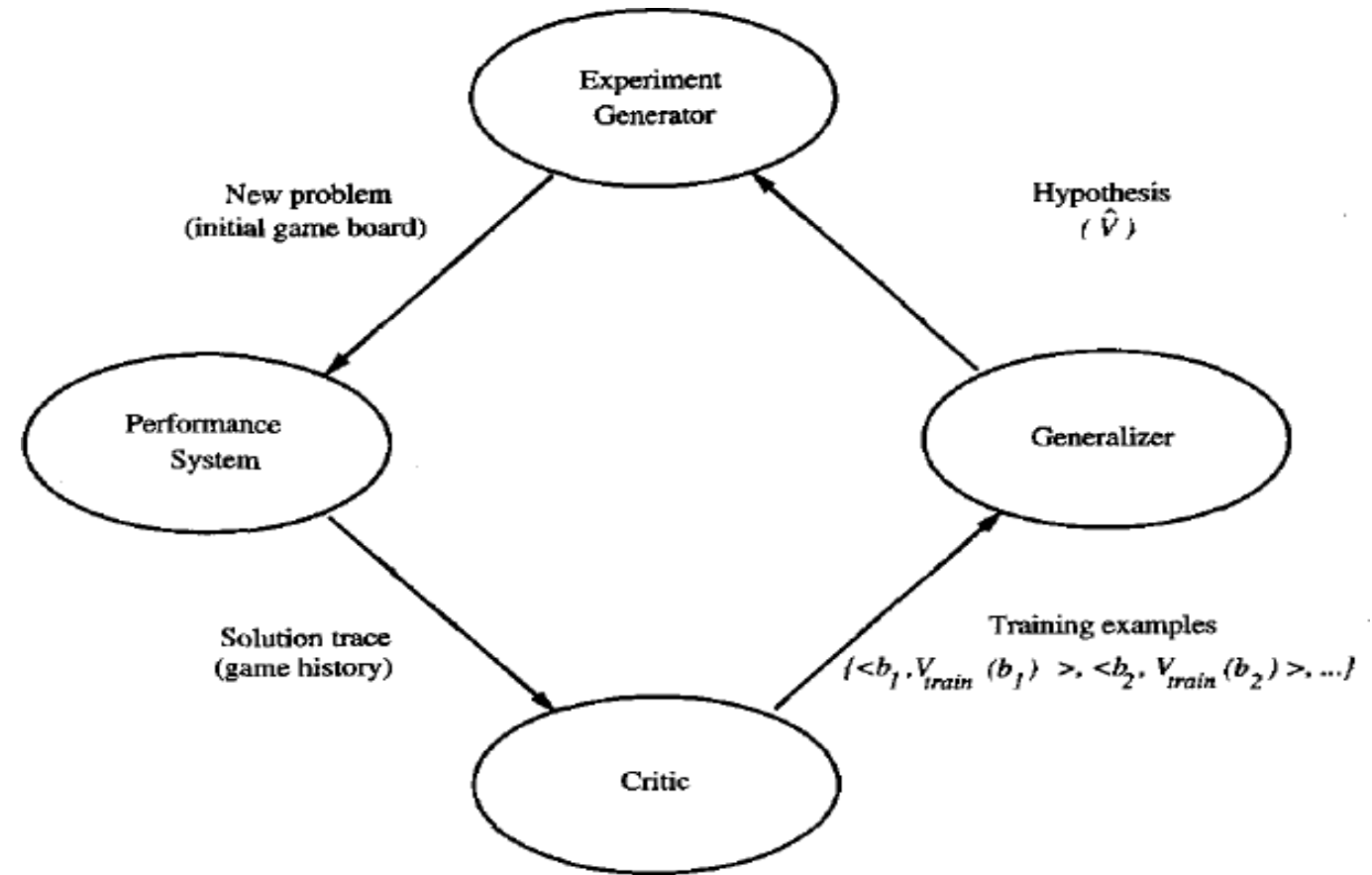
Choosing a representation for the Target Function

1.Specification of the Machine Learning Problem at this time

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Choosing an approximation algorithm for the Target Function

1. Generating training data

2. Adjusting the weights

Final Design for Checkers Learning system

Assessment

Is logic used in machine learning?

Logic-like Systems along with Machine Learning Models

Along with the growing number of applications and domains that use machine learning models, there are still some scenarios that require the use of logic-like systems along with ML models.

What is probabilistic model in machine learning?

Probabilistic Models in Machine Learning is the use of the codes of statistics to data examination. It was one of the initial methods of machine learning. It's quite extensively used to this day. Individual of the best-known algorithms in this group is the Naive Bayes algorithm.

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Reference

▸ Y. S. Abu-Mostafa, M. Magdon-Ismail, and H.-T. Lin, ―Learning from Data, AML Book Publishers, 2012.

▸ P. Flach, ―Machine Learning: The art and science of algorithms that make sense of data‖, Cambridge University Press, 2012.

▸ W3school.com

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