

CHAPTER 4

Conclusion and suggestion

4.1 Conclusion

SOM is a very powerful algorithm as it can be useful in many different situations. SOM is a nonlinear method with the ability to present insight into the model structure. In this research, both SSOM and MSOMs were applied for data exploratory and classification of soil samples from different areas in Thailand. In comparison to the principle component analysis (PCA) and the SSOM, the MSOMs clearly provided the better data visualization and classification results respectively. The MSOMs %CCs were overall higher than the SSOM %CCs. One possible explanation for the improvement could be that each of the maps was independently developed for a specific class membership and therefore there was no need to specify the boundaries between the classes. In addition, the MSOMs provided slightly better predictive results when compared to some classical Kohonen network methods such as CPN and SKN.

4.2 Suggestion

In this study, outlier detection or data screening based on %PA was applied. Therefore, samples with low %PA were removed. Nevertheless, some samples located nearby boundary of each class were remove as well. Therefore, if it is possible %MS should be considered along with %PA for outlier detection to prevent bias. Although, there are concern about issue in this study, all methods were applied with the same random training and test set. Consequently, the classification performance of all methods are comparable.

In fact, it is not easy to choose which method is superior to the others, or whether it is the best method for all situations. For example, some basic techniques like PCA could be applied with some multivariate datasets whereas PCA might giver poor result when deal

with too complicated dataset. Therefore, several different methods should be used for suitable purposes and see, similar results could be obtained. After that the most suitable method could be applied.



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