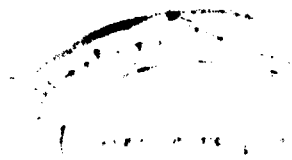


001-642  
THI

**CRYPTOGRAPHIC TECHNIQUES WITH ARTIFICIAL  
INTELLIGENCE**



A PROJECT REPORT PRESENTED BY

H.K.D DEEPAL THILAKAWANSA

to the Board of Study in Statistics & Computer Science of the

**POSTGRADUATE INSTITUTE OF SCIENCE**

in partial fulfilment of the requirements  
for the award of the degree of

**MASTER OF SCIENCE IN COMPUTER SCIENCE**

of the

**UNIVERSITY OF PERADENIYA**

**SRI LANKA**

2010

**645720**



# CRYPTOGRAPHIC TECHNIQUES WITH ARTIFICIAL INTELLIGENCE

H.K.D Deepal Thilakawansa  
244/3, Maharanugegoda, Ragama.

This research focuses on evaluation of a new cryptographic technique which uses characteristics of neural networks in the core. In traditional cryptographic methods; symmetric key and public key, there are several shortcomings.

This report first introduces a basic structure for a new cryptographic method. Based on that structure, diverse training methods are analyzed by adjusting neural network properties, to get an optimal solution for a final model. Discovered model is applied to a practical algorithm which increases the security further. After establishing final algorithm, it is taken in to account with various test methods such as entropy, key sizes, security and other factors which are used for validation, to make out its suitability. Two of new cryptographic techniques are introduced at the end. Those two techniques are far better than the other models which are introduced throughout the research, when using them as symmetric key methods. But as public key methods they has to be improved. However in both ways, those two methods are unable to face to the attacks which use analysis of plain text or cipher text.