Penerbit UTM Press

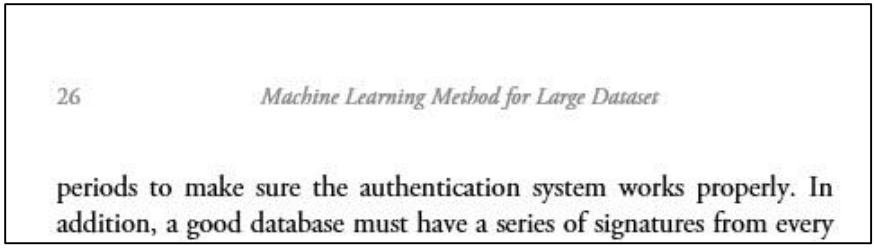
GAYA DAN PANDUAN RINGKAS PENERBITAN *EDITED BOOKS*

1.0 SPESIFIKASI FIZIKAL *EDITED BOOK*

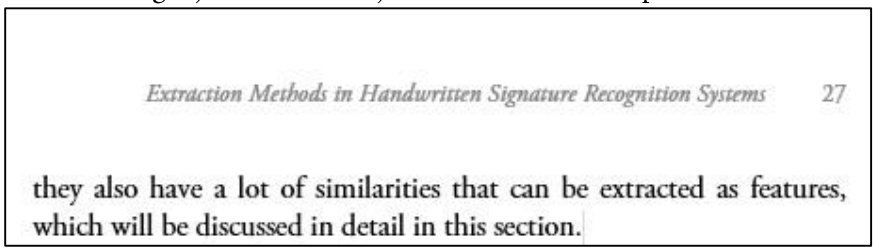
(1) Saiz fizikal *Edited Book*: 6 inci x 9 inci
(2) Saiz jidar (*margin)*:
    a. Atas dan bawah: 1 inci
    b. Kiri dan kanan: 0.75 inci
(3) Font: Times New Roman

2.0 TAJUK TURUTAN (*RUNNING HEADER*) & NOMBOR MUKASURAT (*PAGE NUMBER)*

Muka surat genap (verso) – Tajuk Buku (saiz font: 10pt)



Muka surat ganjil (rekto) – Tajuk bab (saiz font: 10pt)



3.0 TAJUK DAN SUB-TAJUK

Sila gunakan kaedah tidak melebihi empat aras (*level)* dengan tipografi seperti berikut:

(1) **TAJUK** (saiz 12pt, uppercase, bold)
(2) **Tajuk** (saiz 12pt, capitalize each word, bold)
(3) ***Subtajuk*** (saiz 12pt, capitalize each word, bold, italic)
(4) *Sub-subtajuk* (saiz 12pt, capitalize each word, italic)

contoh

3.1 INTRODUCTION

3.1.1 Experimental Design

3.1.1.1 The Learning Phase of the Proposed MODE-ESNN

3.1.1.1.1 Conclusion and Future Works

4.0 RUJUKAN

Format Rujukan Bidang Sains Sosial

Pembangunan sesebuah telaga petroleum ialah suatu kerja yang rumit (Smith, 2004).

Format Rujukan Bidang Sains dan Kejuruteraan

Pembangunan sesebuah telaga petroleum ialah suatu kerja yang rumit [1].

Kedua-dua gaya format diterima tetapi haruslah konsisten untuk semua bab.

5.0 GAYA SENARAI *NUMBERING*

Aras pertama gunakan nombor (cth: (1), (2), (3)……),
Aras kedua sila gunakan abjad (cth: (a), (b), (c)….)
Aras ketiga menggunakan nombor roman (cth: (i), (ii), (iii)

contoh

The main procedure of proposed MODE-ESNN is presented below:

(1) Generate an initial population $P(t)$ at t=0 of size N, where each candidate represents ESNN and where t is the number of the actual iteration.

(2) Determine candidate dimension and assign DE parameters values.

(3) While stopping criterion is not met do:

  (a) Use ESNN algorithm to find the candidate fitness.

  (b) Achieve results of pre-synaptic neurons and ESNN parameters.

  (c) evaluate the candidates of population $Q(t)$ according to its accuracy value.

  (d) Determine the best candidate according to the best parents' values.

  (e) While size of population $P(t+1)$ is < N do:

    (i) Calculate mutated candidates according to Equation 4

    (ii) Perform crossover and selection for each candidate. The target individual candidate is mixed with the mutated vector, using the following scheme, to yield the trial vector u by updating the pre-synaptic neuron and ESNN parameters vector simultaneously using Equation 5

6.0 PENGGUNAAN RAJAH (*FIGURE)* DAN JADUAL (*TABLE*)

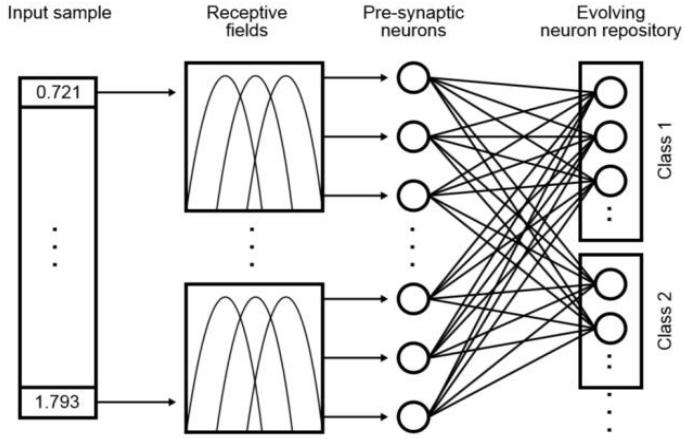


Figure 2.1 A simplified architecture of ESNN

Table 2.4 Results of accuracy for DE-ESNN and MODE-ESNN

Data set		ACC	
		DE-ESNN	MODE-ESNN
Appendicitis	Mean	44.00	**73.00**
	SD	16.47	10.59
Haberman	Mean	73.66	72.00
	SD	10.00	10.09
Heart	Mean	56.33	**58.20**
	SD	5.97	4.53
Ionosphere	Mean	63.43	**69.55**
	SD	6.71	6.30
Liver	Mean	45.71	**50.57**
	SD	11.59	7.26

7.0 FORMAT BAHAGIAN RUJUKAN (*REFERENCES*)

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LAMPIRAN

Size: 20 pt, Capitallize Each Word, Bold

Size: 16 pt, Uppercase

CHAPTER 3

A Review of Feature Extraction Methods in Handwritten Signature Recognition Systems

Aini Najwa Azmi, Dewi Nasien, and Siti Mariyam Shamsuddin

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3.3 Conclusion 29

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3.1 INTRODUCTION

Signature is one of the evidences to justify or validate a document; therefore, a document that has the original signature is a very valuable asset. Signature recognition system is the process used to recognize an individual's handwritten signature (Sanmorino and Yazid, 2011). Signature authentication system is a system that identifies and verifies whether a handwritten signature is genuine or forged. It is very important in security and resource access control such as for banking, money scam prevention, marriage approval, and user access devices. In the field of human identification, signature is the cheapest biometric as compared to Deoxyribonucleic Acid (DNA), fingerprint, palm print, face, vein pattern, retina, and iris recognition. Nevertheless, these physiological traits are almost unchanged throughout of a person's life, unlike signature which may change with environment, mood, and age. A person who does not sign in a consistent manner may have difficulty when his/her signature is being identified and verified. The database should be changed or updated in specified

Machine Learning Method for Large Dataset
Edited by Naomie Salim and Aryati Bakri

Size: 10 pt, Capitallize Each Word, Italic

periods to make sure the authentication system works properly. In addition, a good database must have a series of signatures from every person that are almost similar between each other for better recognition.

A signature recognition system usually involves data acquisition, pre-processing, feature extraction, and classification. In this paper, we focus on the trend of feature extraction. Feature extraction involves simplifying the amount of resources required to describe a large set of data accurately. When performing analysis of complex data, one of the major problems is the number of variables involved in the system. An analysis with a large number of variables generally requires a large amount of memory and computation power or a classification algorithm which over-fits the training sample and generalizes poorly to new samples. Feature extraction is a general term for methods of constructing combinations of the variables to get around these problems while still describing the data with sufficient accuracy. Reliable results are achieved when an expert constructs a set of application-dependent features. However, if no such expert knowledge is available, general dimensionality reduction techniques may help. This chapter is divided into four sections. Section 2 describes the feature extraction trend which is further categorised into online and offline recognition systems. Section 3 presents the performance analysis, followed by the conclusion in Section 4.

3.2 TREND OF FEATURE EXTRACTION

Two signatures written by one person are actually hard to compare. There is the possibility that these instances may occur: variations in length, additions and deletions of portions of them, and changes in velocity due to pauses or hesitations of the writer (Munich and Perona, 2003). The two signatures will have differences between each other but they also have a lot of similarities that can be extracted as features, which will be discussed in detail in this section.

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Based on the acquisition technique, signature identification can be classified as offline or online. In an offline system, the data is acquired from scanned signatures using devices such as a flatbed scanner. With the scanner, the signatures are digitized and only the static image record is stored. The signature images are used for the signature recognition process and will contain a lot of noise that needs to be removed or reduced during the pre-processing. Thus, offline systems are of interest in situations where only the hard copies of the signatures are available. Meanwhile, online signature identification tracks down trajectory and other time-sequence variables using specially designed tablets or other devices during the act of signing (Al-Mayyan *et al*., 2011). Some advantages of an online system is that the data acquisition captures more dynamic or user behavioural information, better information that contains less noise, and simplified data images that is easy to process (Heinen and Osorio, 2006). Table 3.1 shows the comparison between offline and online handwritten signature recognition systems (Sanmorino and Yazid, 2011).