BACKPROPAGATION ALGORITHM FOR CLASSIFICATION PROBLEM: ACADEMIC PERFORMANCE PREDICTION MODEL FOR UITM MELAKA MENGUBAH DESTINI ANAK BANGSA (MDAB) PROGRAM.

BY:

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2. LETTER OF OFFER (RESEARCH GRANT)

UNIVERSITI TEKNOLOGI MARA

PEMENANG Anugerah Kualiti Perdana Menteri 2008

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Tarikh : 21 Jun 2011

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KELULUSAN PERMOHONAN DANA KECEMERLANGAN 06/2011

Tajuk Projek	:	Backpropagation Algorithm for Classification Problem : Academic Performance Prediction Model for UiTM Bandaraya Melaka Bachelor of Administrative Science Students
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Dengan hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan pihak Universiti telah meluluskan cadangan penyelidikan Y Brs Profesor/tuan/puan untuk membiayai projek penyelidikan di bawah Dana Kecemerlangan UiTM.

3. Bagi pihak Universiti kami mengucapkan tahniah kepada Y. Brs. Profesor/tuan/puan kerana kejayaan ini dan seterusnya diharapkan berjaya menyiapkan projek ini dengan cemerlang

4 Peruntukan kewangan akan disalurkan melalui tiga (3) peringkat berdasarkan kepada laporan kemajuan serta kewangan yang mencapai perbelanjaan lebih kurang 50% dari peruntukan yang diterima

Peringkat Pertama	20%
Peringkat Kedua	40%
Peringkat Ketiga	40%

5. Untuk tujuan mengemaskini, pihak Y. Brs. Profesor/tuan/puan adalah diminta untuk melengkapkan semula kertas cadangan penyelidikan sekiranya perlu, mengisi borang setuju terima projek penyelidikan dan menyusun perancangan semula bajet yang baru seperti yang diluluskan. Sila lihat lampiran bagi tatacara tambahan untuk pengurusan projek.

Sekian, harap maklum.

"SELAMAT MENJALANKAN PENYELIDIKAN DENGAN JAYANYA"

Yang benar

DR OSKAR HASDINOR HASSAN
Ketua Penyelidikan (Sains Sosial dan Pengurusan)

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CONTENTS

5.1 PROPOSED EXECUTIVE SUMMARY

Artificial neural networks (ANN) has become one of the artificial intelligent techniques that has many successful examples when applied to classification problem such as doing pattern recognition and prediction. Multilayer perceptrons (MLPs) is one of the topology used for processing ANN, while backpropagation algorithm is one of the most popular methods in training MLPs. UiTM Melaka has set one of the Quality Objectives to be achieved for each faculty is to produce at least 65% of full time students graduating with a CGPA of at least 3.00. There is no existing tool to assist faculties in estimating the number of students that can achieve the objective, hence a prediction model using Backpropagation Algorithm is proposed by using a case study of UiTM Bandaraya Melaka Bachelor of Administrative Science students. The initial model will analyze a trend of past students' achievement upon graduation based on factors such as diploma CGPA and 15 core subjects' results, and after a series of experiments, a final model will be obtained with the best parameters to produce the best results. The final model then will produce an output in the form of prediction for current students' graduation CGPA. The output can be used to identify potentially good and weak students, and for the faculty to arrange the teaching and learning session according to students' capabilities in order to produce students with a CGPA of at least 3.00 upon graduation.

5.2 ENHANCED EXECUTIVE SUMMARY

Neural network has emerged as a very popular area of research, both from the design and the usage points of view. It can be used to do pattern recognition and classification, prediction and control and conceptual information management. With these strengths, it could be applied to develop a model for predicting the student's academic performance from Mengubah Destini Anak Bangsa (MDAB) program in Universiti Teknologi MARA Kampus Melaka which is based on their admission requirement subjects. The model will analyze a trend of past students' achievement whether they completed the (MDAB) Pre-Commerce Program with a CGPA above or less that 2.00, and as a result, it is able to predict the future students' achievement. It is important to make sure that these students can finish Pre-Commerce Program with CGPA at least 2.00 because this is an admission rules to further diploma programs in UiTM. If such a model can be developed, it can assist the university and coordinator in identifying the potential of each student from the beginning of their admission to MDAB program and then plan for steps to be taken in order to increase the academic performance of students. The aim for this research is to make sure all of them can successfully completed and passed this program with CGPA at least 2.0 so that they will offered to continue Diploma program according to the rules and qualifications set by the UiTM Student Admission Department.