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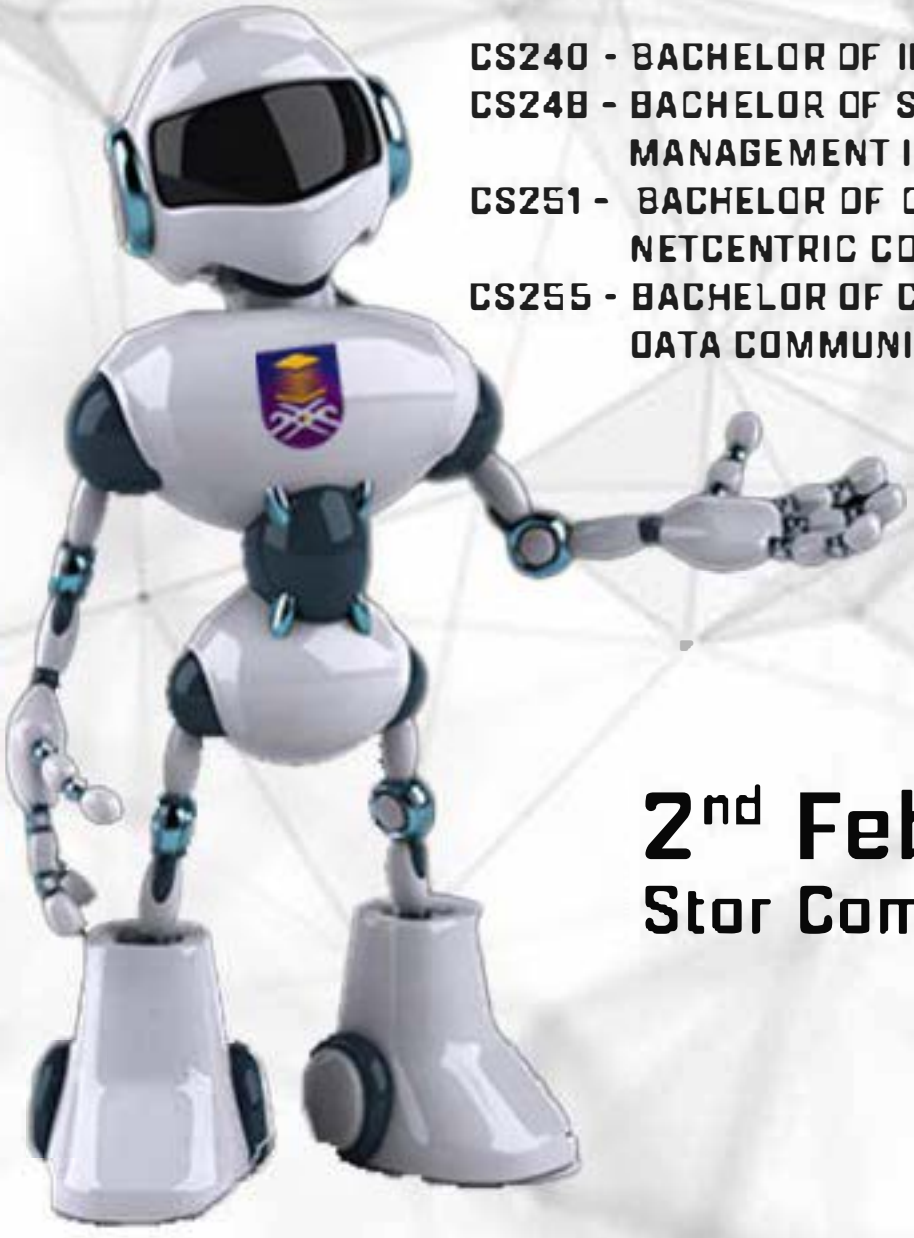
RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

REMACS 5.0



CS240 - BACHELOR OF INFORMATION TECHNOLOGY (HONS.)
CS248 - BACHELOR OF SCIENCES (HONS.)
MANAGEMENT IN MATHEMATICS
CS251 - BACHELOR OF COMPUTER SCIENCE (HONS)
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DATA COMMUNICATION & NETWORKING

2nd Februory 2023

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Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)

Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)
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Preface

It is with great pleasure that we present this extended abstract book, titled "The 5th Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)". This book is a collection of research work in the fields of Computer Science and Mathematics, contributed by the final year students from Universiti Teknologi MARA, Perlis Branch. The aim of this book is to showcase the diversity and depth of research in these two interrelated fields.

Mathematics and Computer Science are two fields that have seen tremendous growth and advancement in recent years. With the rise of new technologies and the increasing demand for data-driven solutions, researchers in these fields have been working hard to develop new theories, algorithms, and models that can help solve some of the most pressing problems of our time. This book is a testament to their hard work and dedication.

The abstracts in this book cover a wide range of topics, including algebra, analysis, logic, computer architecture, algorithms, artificial intelligence, machine learning, computer network, netcentric computing and many more. The work presented here is both theoretical and practical, and has the potential to impact many areas of society, from finance and healthcare to education and security.

We hope that this book will serve as a valuable resource for future students in the fields of Mathematics and Computer Science. We also hope that it will inspire more students to pursue innovative and groundbreaking research in these two fields. Finally, we would like to express our gratitude to all the contributors for their hard work and dedication, without which this book would not have been possible.

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EVENT SCHEDULE

8:00 – 8:30 am
•Registration

8:00 am – 12:00 pm
•FYP Project Presentation

12:00 - 2:00pm
•Lunch Break

2:15 – 2:35 pm
•National & Wawasan Setia Anthems
•Doa Recitation

2:35 – 2:45 pm
•Welcoming Address by Director of REMACS 5.0

2:45 – 2:55 pm
•Officiating & Closing Remarks from Rector of UiTM Perlis

2:55 – 3:00 pm
•REMACS 5.0 Montage

3:00 – 4:00 pm
•Awarding of Winners:
•Best Poster
•Best Project Award

•Photo Session

•End of Ceremony

Dress Code: Formal / Corporate

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RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

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EXTENDED ABSTRACTS

THE DEVELOPMENT OF DISEASES PREDICTION SYSTEM BASED ON SYMPTOMS

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Abstract

In the medical industry, patients must wait a long time for a health check-up at the hospital because the number of patients is too large for the hospital to accommodate. As a result, by employing technologies such as machine learning, the medical industry will be able to speed up the process of identifying diseases. The data and results can help people and serve as a reference in predicting a problem. In this study, the use of this machine learning method is seen to help patients and the medical industry predict disease based on symptom data. Moreover, it also will create an interface to make it easy for user to choose symptom and to display the results using Python. A confusion matrix will be used to evaluate the dataset's accuracy so that more accurate results may be generated.

Keywords*: Cost, time, disease, machine learning*

1. Introduction

The goal of this project is to create a system that uses machine learning algorithms to predict the type of disease based on data related to disease symptoms. The issues chosen for development of this system are intended to assist users in determining the type of disease based on symptoms experienced. By implementing some appropriate algorithms, the system can provide more accurate results based on the data collected. Decision Tree, Random Forest, and Naive Bayes are among the algorithms that will be used to determine the results of the type of disease that related to the symptoms. The system will employ a simple and straightforward user interface designed to allow users to use it easily and save time.

2. Methodology

The first step is to analyse the problem statement in order to better understand the source of the problem. Reading and collecting information from digital newspapers, as well as conducting studies are among the methods used to find information on the issues discussed. First and foremost, developers look for datasets that match the title of the study on websites or platforms such as Kaggle. After locating the appropriate dataset, the downloaded data was reviewed in CSV format in Microsoft Excel to ensure that it is fit for use. Furthermore, this data was transformed into a data type that can be used in the Python programming language. After the evaluate data was cleaned, it then it was converts raw data into numerical form using Pandas software so that it can be used and read by Python programming languages. Following that, the data was trained using machine learning techniques and algorithms such as Decision Tree, Naive Bayes, and Random Forest classifiers. All of these models were written in Python using the Visual Studio Code software. To determine accuracy, the output of machine learning models was compared in this phase using various types of calculations such as the confusion matrix. Finally, it will provide an interface for selecting symptoms and displaying results using Python and tkinter.

3. Results and Discussion

This research focuses on the techniques used to analyse the data. Following data analysis, several results produced can be used as a guide and solution to help people or end user in confronting and forming initial expectations about a problem. Overall, it is believed that this project would be able to help stakeholders in finding solutions to their issues. Cost and time management are two of the primary issues when involving the process to do a check up to determine a disease. Because this system may be

used anywhere and at any time, costs that must be incurred can be reduced and time is perceived as being more economical with this method. Additionally, the system created in this research may produce results quickly and without the need for much time.

4. Novelty of Research / Product

There have been a number of research that have investigated how a dendritic Neuron Model for Disease Prediction Work (Xu et al., 2021). Previous research about a novel method for disease recognition and cure time prediction based on symptom (Shankar et al., 2015). There have also been several research on developing disease risk prediction model base on environment factors (Pak & Shin, 2014). Moreover, there are research that involve Chronic obstructive pulmonary disease (COPD) to predict COPD severity based on clinical data using machine learning (Choi et al., 2021). Nevertheless, one of the research use Convolutional neural network to predict disease risk (Ambekar & Phalnikar, 2018).

5. Conclusion

In conclusion, the development of a disease prediction system based on symptoms can be a valuable tool for healthcare professionals and individuals alike. Such a system can help identify individuals at high risk of developing specific diseases, allowing for early intervention and prevention efforts. Additionally, it can aid in the development of public health policies and interventions, optimize the allocation of healthcare resources and target at-risk groups who may require preventative measures.

REFERENCES

Ambekar, S., & Phalnikar, R. (2018). Disease Risk Prediction by Using Convolutional Neural Network. *Proceedings - 2018 4th International Conference on Computing, Communication Control and Automation, ICCUBEA 2018*. https://doi.org/10.1109/ICCUBEA.2018.8697423

Choi, E. A., Kim, J. W., Nah, G., Kim, W., Yoo, K., Kim, Y. Y., & Yoon, D. (2021). Prediction of COPD severity based on clinical data using Machine Learning. *Proceedings - 2021 IEEE International Conference on Bioinformatics and Biomedicine, BIBM 2021*, 1646–1648. https://doi.org/10.1109/BIBM52615.2021.9669887

Pak, M., & Shin, M. (2014). Developing disease risk prediction model based on environmental factors. *Proceedings of the International Symposium on Consumer Electronics, ISCE*, 1–2. https://doi.org/10.1109/ISCE.2014.6884338

Shankar, M., Pahadia, M., Srivastava, D., Ashwin, T. S., & Reddy, G. R. M. (2015). A Novel Method for Disease Recognition and Cure Time Prediction Based on Symptoms. *Proceedings - 2015 2nd IEEE International Conference on Advances in Computing and Communication Engineering, ICACCE 2015*, 679–682. https://doi.org/10.1109/ICACCE.2015.66

Xu, W., Li, C., Jia, D., Cao, Y., Dong, Z., Zhang, M., Bai, Y., Zhu, R., Tang, X., & Dou, Y. (2021). A Dendritic Neuron Model for Disease Prediction. *2021 IEEE International Conference on Advances in Electrical Engineering and Computer Applications, AEECA 2021*, *1*, 1118–1122. https://doi.org/10.1109/AEECA52519.2021.9574192

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