UNIVERSITI TEKNOLOGI MARA

FASHION RECOMMENDATION SYSTEM USING FUZZY ANALYTIC HIERARCHY PROCESS (FAHP)

MUHAMMAD HAKIM BIN HUSIN

BACHELOR OF COMPUTER SCIENCE (Hons.)

JAN 2025

Universiti Teknologi MARA

ACKNOWLEDGEMENT

Alhamdulillah, praise and thanks to Allah for His Almighty and His infinite blessing, I was able to complete this research within the period frame given. First and foremost, I'd want to thank my supervisor, Sir Zawawi, for his dedication in guiding me, advising, and offering his time and emotional support while I struggled to complete the project report.

Furthermore, I'd like to express my heartfelt gratitude to my parents, whose never-ending affection, encouragement, and sacrifices have been my most powerful source of strength and inspiration. Their help has been vital throughout my studies.

would also like to convey my heartfelt gratitude to my professor, Madam Ummu, for her insightful lectures and assistance, which have tremendously aided my understanding and accomplishment of this project.

Finally, I am extremely grateful to all my dear friends for their unwavering support, encouragement, and companionship, which has made this journey memorable and meaningful. Your unfailing belief in me has been a powerful motivator.

ABSTRACT

The project aims to address the challenge of enhancing the personalization of fashion recommendations, a task that is becoming increasingly complex due to the vast array of fashion options available online. Many users face difficulties in selecting styles that match their preferences, often resulting in decision fatigue and dissatisfaction. To tackle this problem, the project employs the Fuzzy Analytic Hierarchy Process (FAHP), a multi-criteria decision-making model capable of handling the uncertainty in human decision-making. This methodology is chosen for its ability to provide recommendations by incorporating fuzzy analytic hierarchy process (FAHP) to better interpret and match user preferences.

The project follows the Agile methodology, structured into three phases: preliminary, design and implementation, and lastly testing and evaluation. This iterative approach allows for continuous improvement and refinement of the recommendation system based on user feedback and evolving fashion trends. Initial stages involve a thorough literature review and data preprocessing, including data collection and cleaning. The core of the project lies in implementing the FAHP model to develop a recommendation system that offers fashion suggestions. Preliminary findings indicate that the FAHP-based system significantly enhances the personalization of recommendations, leading to higher user satisfaction and potentially reducing the environmental impact caused by returned and discarded fashion items as for the evaluation result it achieved from Mean Absolute Error (MAE) is 8.11 where it is less than 10 where it is acceptable. This approach sets the stage for future advancements in e-commerce solutions.

TABLE OF CONTENTS