

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX'24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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FOREWORD BY THE RECTOR OF UiTM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi

Rector, Universiti Teknologi MARA (UiTM)

Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Umami Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah

Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

**FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY,
INNOVATION AND DIGITAL COMMUNICATIONS**



YB Datuk Fairul Nizam bin Roslan

Melaka State Exco of Science, Technology, Innovation and Digital Communications

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

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Thank you.

MIIEX'24 ORGANISING COMMITTEE

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	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

ABOUT MIIEX'24

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs.

This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

OBJECTIVES

1. Encourage and instil passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;
2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;
5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

THEME

‘EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION’

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FinDr

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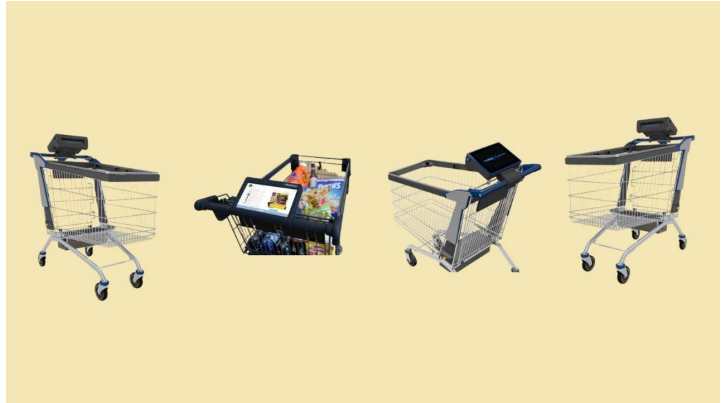
Abstract

Sticking to a monthly budget can be difficult, especially during supermarket trips, because the layout of the aisles influences consumer purchasing behavior, frequently leading to overspending. To address these concerns, we propose an innovative solution: a smart shopping cart called FinDr. This cart has an integrated screen on the handle where users can enter their shopping list or desired items. The cart's software then guides users to the appropriate aisles, allowing them to stay within their budget and buy only what they need. Furthermore, FinDr assists users who may have difficulty navigating the store layout, such as blind people or elderly shoppers, to ensure they can find what they're looking for quickly. This solution is adaptable to a variety of supermarkets without requiring significant changes to their systems or layouts. Store owners can simply enter relevant information into the website, and FinDr will direct customers accordingly.

Keywords: Financial Management, Monthly Budget, Smart Trolley

1. INTRODUCTION

Similar marketing techniques, such as positioning high-value items at the entrance and necessities toward the back of the store, are frequently used by supermarkets throughout the world to persuade consumers to spend more money. Customers are influenced by this arrangement, which makes them overspend on impulse buys. Based on this problem, we have decided to create a system that can reduce the user's burden on expenses. The system we created is proudly named FinDr. FinDr's



approach prioritizes their demands and leads customers to preferred things, all while helping them stay within their budget. It also has features designed specifically for those on the autism spectrum, encouraging equality of access and inclusivity in the retail setting. FinDr is the perfect shopping partner that will transform your buying experience. FinDr's clever navigation system and user-friendly design make it easy to browse the aisles while sticking to your budget. With FinDr, give excessive spending a fond farewell and welcome to a more intelligent and productive buying experience.

2. OBJECTIVE

Our innovation product, FinDr is specially designed to help customers manage their grocery shopping within their budgetary constraints. Recognising food as a basic human need, the system addresses the tendency to overspend on grocery trips, which are frequently the result of eagerly anticipated monthly shopping excursions. It also aims to improve the shopping experience by prioritizing efficiency, including features that display all relevant aisles for products customers need to buy, catering especially to people with hectic schedules. Furthermore, it expands its functionality to assist independent autistic shoppers by providing guidance, highlighting relevant features, and reducing distractions to improve focus during the shopping process.

3. NOVELTY & INVENTIVENESS

Unlike traditional shopping carts, our trolley, equipped with the FinDr system, provides a hassle-free shopping experience. Customers who rely on lists for grocery shopping frequently face challenges such as losing their list or dealing with a dead phone battery, resulting in unplanned purchases and overspending. With FinDr, users simply enter their shopping list before beginning, and the system organizes the items by aisle, making it easy to find them. While some supermarkets provide their own apps, they frequently lack important information such as product stock levels and aisle locations, particularly for offline shoppers. FinDr bridges this gap, especially for those who use grocery shopping as a form of therapy. Furthermore, FinDr is adaptable to any supermarket layout, requiring only brief modifications on the store's end.

4. PRACTICALITY & USEFULNESS

FinDr is a supermarket-specific system where administrators input product details, stock level, and display location into the platform. This data is then displayed on the trolley screen after users select items, without requiring stores to change their layouts. FinDr improves the shopping experience by including an appealing homepage, a list of popular items for quick selection, and a search function for additional products. Users can contact support by clicking the "Contact Us" button and reading FAQs for more information. FinDr intends to roll out in major Kuala Lumpur and Selangor supermarkets, with a target of at least 5 units per store, including HeroMarket, Tesco, AEON, Village Grocer, Jaya Grocer, Eonsave, Giant, and Mydin.

5. CONCLUSION

Since we invented the FinDr system, we are now at a point where our budgets no longer limit what we can buy. FinDr's ensures that every purchase is in line with their spending plans by giving customers accurate information and a strong dedication to financial caution, allowing them to shop around with confidence. Furthermore, FinDr's had raised the bar by emphasizing empathy and inclusivity for people of all abilities, particularly for independent autistic individuals.

This allows us to accept this invention as proof of the ability of technology's ability to empower every customer, regardless of their situation.

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