

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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INNOVATION, INVENTION, AND DESIGN

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 (MIIEEX), 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.

MIIEEX 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 MIIEEX 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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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.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	FAIQAH HAFIDZAH BINTI HALIM
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	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	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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VoiceEase for People with Vision Impairment Disabilities

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Abstract

Among the challenges faced by individuals with disabilities in traditional expense tracking methods, they are often required to do a manual input or use multiple complex interfaces. By leveraging voice recognition technology, VoiceEase enables users to effortlessly keep record on their expenses through natural speech commands, eliminating the need for physical interaction with devices. With features such as categorization, budgeting assistance, and customizable alerts, our solution aims to enhance financial autonomy and improve overall quality of life. The objective was to create a user-friendly platform that empowers individuals with disabilities to manage their finances independently. The novelty of VoiceEase apart from the existing tracking system is the use of voice recognition technology, making it accessible and intuitive for users with mobility or dexterity impairments. Ultimately, our voice-activated expense tracker benefits society by providing a means for individuals with disabilities to take control of their financial management, thereby promoting greater independence and well-being.

Keywords: Disabilities, Voice, Expenses Tracker.

1. INTRODUCTION

Managing personal finances has become increasingly dependent on technology in the current digital era. However, current traditional expense tracking methods may present serious difficulties for people with disabilities, from inaccessible interfaces to the limitations of manual data entry. In response to this critical need for inclusive financial tools, we present “VoiceEase” a Voice Expenses Tracker, a cutting-edge application specifically designed to empower

individuals with disabilities to manage their expenses with ease and efficiency. Voice-E offers an easy and user-friendly approach to tracking expenses using voice recognition technology. Users can easily input, categorize, and track their expenses in real-time basis by simply voicing commands. With the help of this innovative solution, the challenges created by traditional interfaces are removed, allowing people with disabilities to manage finances on their own.

2. OBJECTIVE

The objective of a VoiceEase for a person with disabilities such as vision impairment to provide an accessible, easy-to-use tool that allows users to manage their finances independently through voice commands. It aims to enhance existing expenses tracking system through accuracy, customization, integration with assistive technologies, privacy, security, and user support. This empowers individuals with special needs to track expenses efficiently, enhancing their financial management and overall well-being.

3. NOVELTY & INVENTIVENESS

VoiceEase introduces a new chapter of financial management to enhance the ability to manage finances easier for special needs individuals. By leveraging the power of voice recognition technology, it revolutionizes the way individuals with disabilities manage their finances. By harnessing the power of voice commands, VoiceEase empowers users to effortlessly manage their finances with more simplified features that eliminate the barrier for disabled people. With its innovative design and simplicity, VoiceEase sets a new standard in accessibility and revolutionizes the way disabled people interact with financial tools. As it stands, VoiceEase is a useful and brilliant financial tool to manage your finances

4. PRACTICALITY & USEFULNESS

VoiceEase uses voice commands rather than a notification that appears when you complete a transaction. This innovation allows users to track their expenses with just a voice command. This function could help those with vision impairment disabilities by allowing them to simply hear the voice that will be generated by the apps when they complete a transaction. The voice command will appear automatically once the transaction is completed. It can be set in two languages: Malay and English, and users can choose whether to use a male or female voice.

Also by promptly hearing the amount of money that needed to be transferred, those with vision impairment disabilities can confirm whether the transaction made is in the correct amount or not. Any discrepancies or suspicious transactions can be easily detected, by having this feature for those with vision impairment disabilities will enable them to take swift action, such as contacting their bank or financial institution to report and prevent further issues. Not only that, but this feature will prevent visually impaired users from being scammed. Knowing that they have a reliable system in place to notify them of money transfers gives blind users peace of mind. Users can confidently have their financial transactions, knowing that they have the tools to promptly verify each transaction's accuracy and legitimacy.

5. CONCLUSION

VoiceEase enables users, particularly those with disabilities, to have an easier time. With features that are simple to use, this voice expenses device is made to be quite useful for individuals with disabilities, especially when it comes to making payments such as at convenience stores. Therefore, by removing the need for consumers to struggle to provide their money to the cashier when they want to pay, we invented VoiceEase, which benefits both the user and the retailer. For those with disabilities, VoiceEase will be necessary in the future.

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