

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

Website: <https://vmiex.uitm.edu.my/>

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”

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PUBLISHED BY:

UiTM Cawangan Melaka

KM26 Jalan Lendu,

78000 Alor Gajah

Melaka Bandaraya Bersejarah

Tel: +606-5582094 / 2190 / 2113

eISBN: 978-967-2846-81-9

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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 (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

COMMITTEE	NAME
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	DR NORASHIKIN ADAM
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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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Fait: Financial Autism Insight Tool

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ABSTRACT

Personal financial management is always associated with normal society and is not particularly focused on people with disabilities, such as mild autism (level 1 autism spectrum disorder). Mild autism is a person who displays less intense autistic traits and requires less support than other autistic people do. These people are denied the opportunity to learn how to manage their own personal finances and must rely solely on their guardians. But we need to think about their future. This is to help them develop the ability to care for and manage their own finances without needing guidance. Furthermore, there is no innovation or application specifically designed for this group of people. Hence to improve, we used technology which is AI that would be the smart assistance called 'FAIT' which stands for Financial Autism Insight Tool. The FAIT application has been designed to guide a mild autistic user to learn about their spending habits, informing them on how much spending and savings they've made, and assist them to not overspending their money. FAIT can also remind users of any debt they did not complete or upcoming debt they need to complete. All of these features will be displayed creatively in order to attract them. This type of innovation can train and assist people with mild autism in gradually learning to manage their finances, as even if their autism is mild, they still struggle to understand certain concepts, particularly those related to personal finance.

Keywords: Mild Autistic, FAIT, Technology, AI, Assistant, Smart

1. INTRODUCTION

Personal finance management plays an essential part in daily life in our modern society, influencing everything from housing and education to healthcare and leisure. However, figuring out the specifics of money management can present particular difficulties for people dealing with a variety of illnesses or medical conditions. Besides acting as guardians of financial assets, banks need to provide some services and tools that help people manage wisely, even when faced with health-related difficulties. Our effort is to innovate this one specialized application to help “mild autism” people out there to be able to manage their finances.

Level 1 autism spectrum disorder is used to diagnose mild autism. It indicates that the individual doesn't have severe autism symptoms which means he or she requires less support than is usual for other autistic individuals. Even those with minimal support needs who are autistic still struggle to interact and communicate with others. We added an AI that would be a guide, especially for the “mild autism” users and this app is called ‘Financial Autism Insight Tool (FAIT)’. Users will need to fill in their personal information like their phone number and their app account for FAIT to access their account and be able to communicate with the users more easily.

FAIT is meant to help users with their spending habits by providing guidance, reminders, and information about their expenses and savings. It also serves as a helpful reminder to users not to spend excessively. Users of FAIT can also be reminded of any outstanding or upcoming debt that needs to be paid off. Since even those with mild autism still struggle to understand certain things, this can also help them progressively learn how to manage their finances. When using FAIT, boomers or new users who are having problems can get help from the guide. We hope to point out the importance of inclusive banking practices in promoting financial empowerment and the overall well-being of people dealing with health issues.

2. OBJECTIVE

This project has various objectives, including (I) designing ‘FAIT’ known as the Financial Autism Insight Tool; and (II) helping persons with moderate autism manage their finances and understand some financial components.

3. NOVELTY & INVENTIVENESS

The creation of the "FAIT" smart financial assistant software, which is intended especially for people with moderate autism, demonstrates creativity and originality. By stressing the significance of giving them the ability to handle their finances on their own, this application seeks to address the dearth of resources for financial management specifically designed for this group of people. The utilization of AI technology to help consumers manage their finances, comprehend their spending patterns, and refrain from overspending is another innovative aspect of this product. The program also reminds users of impending or current debts, with the goal of progressively teaching and supporting people with moderate autism in handling their money. In addition to enabling people to manage their money more effectively, the paper emphasizes how the SORA can promote global financial inclusion and democratize access to financial services.

4. PRACTICALITY & USEFULNESS

The practicality and usefulness of FAIT lie in its ability to transform the way people with disabilities, particularly those with mild autism, interact with their finances. The application provides unparalleled convenience, accessibility, and innovation, allowing users to conduct various financial activities from their smartphones or tablets at any time and from any location. FAIT is designed to guide users in understanding their spending habits, managing savings, and avoiding overspending. It also provides reminders for outstanding or upcoming debts, aiming to gradually train and assist individuals with mild autism in managing their finances.

How does this artificial intelligence identify if an individual is considered an autistic citizen? Starting off with data collection where The AI tool collects data from user input based on self-assessment checklists or questionnaires. This could include questions about social interactions, communication styles, repetitive behaviors, and sensory sensitivities. The AI models would be trained on a diverse dataset of individuals with and without autism, including different age groups, genders, and ethnic backgrounds. The models would identify key features or patterns in the data that are indicative of autism. This could include social, communication, and behavioral patterns. The tool would provide feedback to the user based on the score, explaining the likelihood of autism and suggesting the next steps, especially in financial management.

The application's practicality and usefulness are further emphasized by its potential to democratize access to financial services, empower individuals to manage their finances more efficiently and drive global financial inclusion.

5. CONCLUSION

To summarize, this app can transform the way people with disabilities interact with their finances, providing unparalleled convenience, accessibility, and innovation. This application allows users to conduct various financial activities from their smartphones or tablets at any time and from any location. Hence, despite their disability, they also can manage their personal finances easily without any help from others and do not require any cost. In essence, this application is transforming the finance industry by democratizing access to financial services, empowering individuals to manage their finances more efficiently, and driving global financial inclusion. As we embrace the digital revolution, stakeholders such as financial institutions, regulators, and technology providers must work together to address challenges and maximize the potential of online apps in order to build a more inclusive and resilient financial ecosystem.