

EXTENDED ABSTRACT

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024 "EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024 "EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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FOREWORD BY THE PROJECT DIRECTOR

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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 Ummi 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

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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.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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i.	

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	FAIQAH HAFIDZAH BINTI HALIM
	NORSHAHIDATUL HASANA BINTI ISHAK
	HAZRATI ZAINI
	KHAIRUL NURMAZIANNA ISMAIL
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PROGRAM BOOK, ABSTRACT &	DR MAIMUNAH JOHARI
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	PN NOR HALAWAH AHMAD
	PN AZIRA RAHIM
	NORLINDA TENDOT ABU BAKAR
	AFZAN SHAHILLA AMIR HAMZAH
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	MASLIZA BINTI MOHD RAZALI
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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

- 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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Technological Innovation:

The Future and Challenges in Malaysia Context

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Abstract

This abstract introduces an innovative design concept for smart glasses, representing a significant advancement in assistive technology for visually impaired individuals. By integrating cutting-edge features such as navigation, object recognition, and emergency assistance, these smart glasses aim to revolutionize the daily experiences of users. The navigation system utilizes auditory cues to provide real-time guidance, allowing users to navigate their surroundings with confidence and ease. This feature not only enhances mobility but also fosters a greater sense of independence by reducing the reliance on external assistance. Furthermore, the inclusion of object recognition capabilities enables users to identify objects in their environment, thereby enhancing their situational awareness and facilitating smoother navigation. Additionally, the incorporation of an emergency assistance sensor adds an extra layer of safety, automatically detecting falls or critical situations and initiating a pre-programmed response to ensure user well-being. Together, these integrated features empower users with greater autonomy, enhanced safety, and a more immersive interaction with their surroundings, promising to redefine the possibilities for independent living among visually impaired individuals.

Keywords: Technological innovation, Future, Challenges, Malaysia Context

1. INTRODUCTION

In Malaysia, the landscape of innovation is both promising and challenging. This summary explores how technological advancements are shaping Malaysia's future, while also addressing the obstacles it faces. Technological innovation, essentially finding smarter ways to do things using technology, is driving significant changes in Malaysia. This summary examines how these

changes are helping Malaysia's economy grow and improving people's lives. It focuses on areas like artificial intelligence, renewable energy, and making cities smarter. Additionally, it highlights the government's efforts to support startups and innovative ideas in these areas.

However, Malaysia faces hurdles. It invests less in research and development (R&D) compared to other countries, limiting its ability to keep pace with global technological advancements. Moreover, there's a skills gap; many people lack the necessary skills for jobs in technology. Addressing these challenges is crucial for Malaysia to thrive in the digital age. Despite these challenges, Malaysia has immense potential. By increasing investment in R&D and enhancing skill development initiatives, Malaysia can position itself as a leader in technological innovation, ensuring sustainable growth and prosperity for its people.

Navilens glasses represent an innovation significant advancement in assistive technology, featuring advanced navigation, object recognition, and emergency assistance capabilities. Designed with the specific needs of the blind community in mind, these glasses provide a revolutionary experience, delivering intuitive navigation support, enhanced perception of surroundings, and immediate assistance during emergencies.

2. OBJECTIVE

The objective behind the development of smart glasses equipped with navigation, object recognition, and emergency assistance for blind individuals is to significantly enhance their quality of life and safety. By leveraging advanced technology, these glasses aim to provide invaluable support to visually impaired individuals, empowering them to navigate their surroundings with greater ease and confidence. Central to this goal is the real-time guidance feature, which offers users instant assistance in navigating through diverse environments, thereby reducing their reliance on physical assistance and fostering a sense of independence.

Moreover, the incorporation of object recognition technology within the smart glasses serves to further augment the user experience. This functionality enables blind individuals to identify and interact with objects in their path, facilitating smoother navigation and enhancing their overall autonomy. With the ability to recognize obstacles and danger, users can navigate their surroundings more efficiently, thereby mitigating risks and promoting a greater sense of security. Ultimately, the overarching aim of these smart glasses is to empower blind individuals to lead more independent and fulfilling lives by providing them with the tools and support necessary to navigate their surroundings safely and confidently.

3. NOVELTY & INVENTIVENESS

Navilens heralds a groundbreaking advancement in the quest to streamline the daily lives of visually impaired individuals across Malaysia, particularly those who lack consistent physical assistance. This innovative technology is meticulously crafted to serve as a seamless companion in navigating the intricacies of daily routines, thereby empowering users to traverse their environments independently and with unwavering confidence. Through the utilization of Navilens, blind individuals are endowed with a dependable and user-friendly tool that elevates their navigation prowess, allowing them to effortlessly navigate diverse settings with ease. Whether navigating bustling city streets, accessing public transportation networks, or venturing into unfamiliar territories, Navilens stands as a beacon of empowerment, enabling users to chart their course with newfound autonomy and self-assurance.

In essence, Navilens signifies a paradigm shift in the lived experiences of visually impaired individuals in Malaysia, promising a transformative impact on their daily routines. By providing a reliable means of navigation, this pioneering technology not only bestows users with newfound freedom but also instils a sense of empowerment and convenience in their everyday lives. With Navilens at their disposal, visually impaired individuals are poised to embark on a journey marked by independence, self-reliance, and unparalleled confidence, heralding a new era of inclusivity and accessibility in Malaysia's assistive technology landscape.

4. PRACTICALITY & USEFULNESS

This groundbreaking product stands at the forefront of revolutionizing the daily experiences of blind individuals, offering them a pathway towards increased independence and empowerment. With its core function focused on assisting users in navigating their surroundings, this product serves as a beacon of support, providing visually impaired individuals with the tools they need to traverse their environment with greater ease and confidence. By fostering a sense of self-sufficiency, it aims to diminish any lingering feelings of isolation or exclusion that may arise from the reliance on others for assistance, thereby promoting a more inclusive and equitable society.

Moreover, beyond its practical utility, this product holds immense potential as a catalyst for societal change. By showcasing the capabilities of blind individuals to perform tasks autonomously, it has the power to challenge existing perceptions and stereotypes surrounding

blindness. Through its demonstration of the unique strengths and abilities possessed by visually impaired individuals, despite the challenges posed by their vision impairment, this product has the capacity to foster greater awareness and understanding within society. By shedding light on the resilience and ingenuity of blind individuals, it can contribute to breaking down barriers and promoting inclusivity and acceptance on a broader scale. In essence, this innovative solution not only offers tangible assistance but also serves as a symbol of progress and empowerment, ushering in a future where blind individuals are recognized, respected, and empowered to thrive.

5. CONCLUSION

Our company is dedicated to creating smart glasses that adapt to the needs of people with disabilities. Our goal is not just about making cool technology, but it is also about making sure everyone feels included and empowered to live their best lives. By using the latest technology and thinking carefully about what users need, we believe our business can make a big difference for millions of people worldwide.

We are all about making sure our products are easy for everyone to use, no matter what challenges they might face. That means thinking hard about how to design them, so they work for as many people as possible. By focusing on inclusivity from the start, we want to give people with disabilities the tools they need to be more independent and have more opportunities in life. We're excited to be part of a movement towards a world where everyone has a fair shot at living their best life, and we're committed to making that happen through our innovative products.

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