



EXTENDED ABSTRACT



InViCCAID 2025
1ST INTERNATIONAL VIRTUAL COMPETITION OF CREATIVE
ARTS & INNOVATIVE DESIGN IN TEACHING & LEARNING



Design Innovation Academic Show 2025



Organized by



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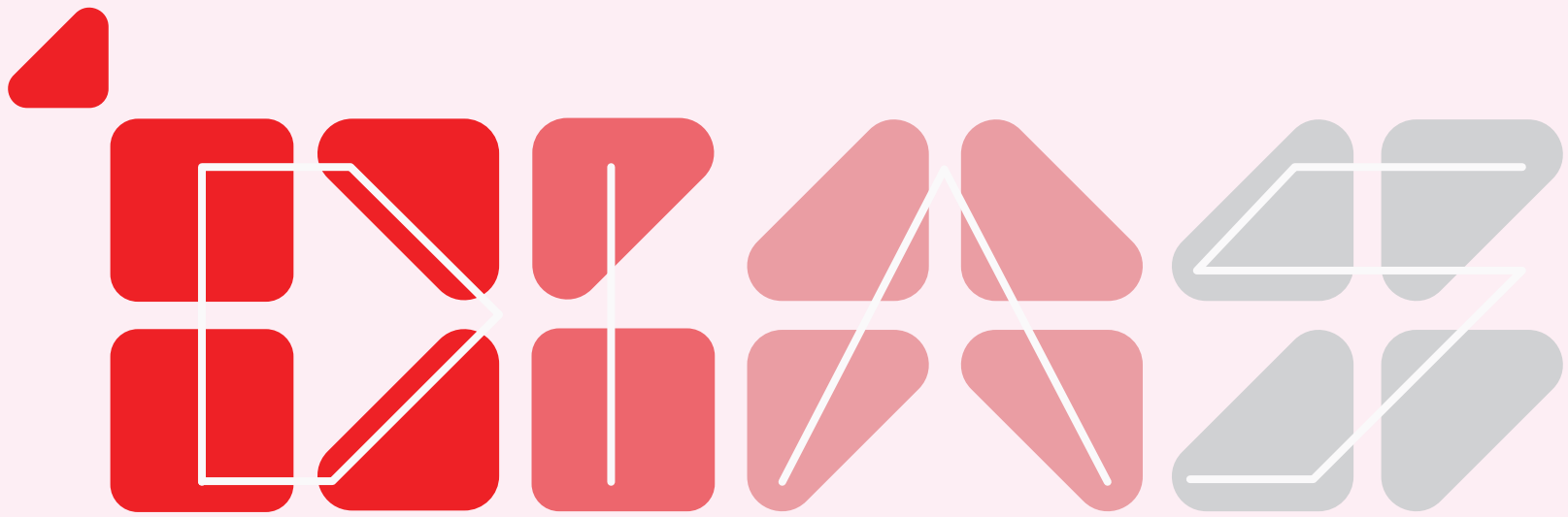
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***EXTENDED
ABSTRACT***

***Design
Innovation
Academic
Show 2025***





DIAS 2025 (Design Innovation Academic Show) is all about "Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st Century Education." This vibrant program shines a spotlight on how creativity and innovation are reshaping modern education.

It consists of three key components. First up is the Mindareka Design Show, an exhibition that showcases students' final year projects and creative designs, giving them a chance to connect with industry professionals and the wider community. Next, we have the Northern Innovation Academic Tour (NIAT), which takes participants on an academic adventure to select institutions and innovation centers in the northern region, aimed at promoting knowledge sharing and building strong academic and professional networks.

Finally, there's the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID), a global competition that recognizes outstanding practices in teaching and learning by blending art, technology, and innovative design. But DIAS 2025 is more than just a talent showcase; it's a powerful platform for empowering both students and educators, while also strengthening collaborations between universities, creative industries, and global communities. With its inclusive and interdisciplinary approach, this initiative strives to spark relevant, competitive, and impactful ideas and innovations that truly benefit society and push the future of education forward.



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Design
Innovation
Academic
Show 2025



Prof. Dr. Roshima Haji Said
Acting Rector
UiTM Kedah Branch

Rector's Message

I am delighted to extend my heartfelt congratulations to the College of Creative Arts, UiTM Kedah Branch, for bringing MINDAREKA 2024 - Unleashing Your Visual Creativity to fruition. The triumphs of past MINDAREKA editions undoubtedly fueled the organization of this year's event, making MINDAREKA 2024 a reality.

MINDAREKA 2024 - Unleashing Your Visual Creativity stands as a testament to the dedication of students at the College of Creative Arts, UiTM Kedah Branch, providing them with a platform to showcase their final art projects. Beyond serving as a space for the exploration of fresh, innovative, and entrepreneurial concepts, this exhibition is poised to connect aspiring talents with potential clients and employers.

I extend my sincere gratitude to all participants whose enthusiasm and support have contributed to the success of MINDAREKA 2024 - Unleashing Your Visual Creativity. Their unwavering belief and commitment have truly brought this event to life, marking it as a resounding triumph!





Head of Faculty Message

It is an honour to introduce DIAS 2025 – Design Innovation Academic Show, held under the theme “Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st-Century Education.” This significant event reflects the faculty’s ongoing commitment to fostering a culture of innovation, critical thinking, and creative exploration among our students and academic community. As we navigate the complexities of the 21st century, it becomes increasingly clear that education must go beyond traditional boundaries to embrace multidisciplinary approaches that are both relevant and future-forward.

The three core components of DIAS 2025, Mindareka Design Show, Northern Innovation Academic Tour (NIAT), and the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID) which is serve as vital platforms to highlight the convergence of design, technology, and pedagogy. These initiatives not only empower our students to showcase their talents and ideas, but also create opportunities for engagement with industry leaders, academic peers, and global collaborators. The Mindareka Design Show celebrates student creativity and innovation through compelling final year projects. NIAT fosters knowledge sharing and institutional partnerships through academic visits and exchanges, while InViCCAID offers international recognition for excellence in integrating art and design into teaching and learning.

I would like to express my deepest appreciation to the organising committee, faculty members, students, and strategic partners who have worked tirelessly to bring this programme to life. Your dedication and collaborative spirit have made DIAS 2025 a reality and a reflection of our shared vision for transformative education. It is my hope that this platform will continue to inspire meaningful dialogue, cultivate groundbreaking ideas, and spark a new wave of innovation that enriches both education and society.



Mohamat Najib Mat Noor
Head of Faculty
Faculty of Arts & Design
UiTM Kedah Branch





***Industrial
Design
(Diploma)***





“DEVELOPMENT OF A SUSTAINABLE MINI FLATBED TRUCK FOR FARMER INDUSTRY WITH PERODUA COLLABORATION” (TERRAX)

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ABSTRACT

This project introduces Perodua TerraX, a sustainable mini flatbed truck co-developed with PERODUA, purpose-built to meet the evolving demands of the agricultural sector particularly for small to medium-scale farming operations. Drawing inspiration from the compact efficiency of Japanese kei trucks, TerraX provides an eco-friendly, agile transport solution tailored for rural and semi-urban farming environments. Unlike traditional farm vehicles that are fuel-dependent and often oversized for localized tasks, TerraX prioritizes sustainability, maneuverability, and multi-functionality. Powered by an electric drivetrain and enhanced with roof-mounted solar panels, TerraX supplies clean energy not only for propulsion but also for flatbed-based agricultural utilities such as irrigation systems, seedling incubators, or tool-charging stations. The modular truck bed accommodates plant-growing units, allowing farmers to transport, energize, and even nurture crops while in transit or on-site. This integrated functionality reduces reliance on external power sources and enhances mobile productivity. Reflecting PERODUA's design DNA, TerraX showcases a rugged yet modern aesthetic, finished in earthy tones like forest green, matte black, and metallic silver. The compact driver's cabin is equipped with an intuitive control interface and weather-resistant materials suited for outdoor agricultural use. Perodua TerraX bridges the gap between traditional farming needs and clean-energy innovation, setting a new benchmark for sustainable rural mobility in Malaysia and beyond.

KEYWORDS: TerraX, Sustainability, Electric Drivetrain, Solar-Powered Flatbed, Rural Mobility

INTRODUCTION

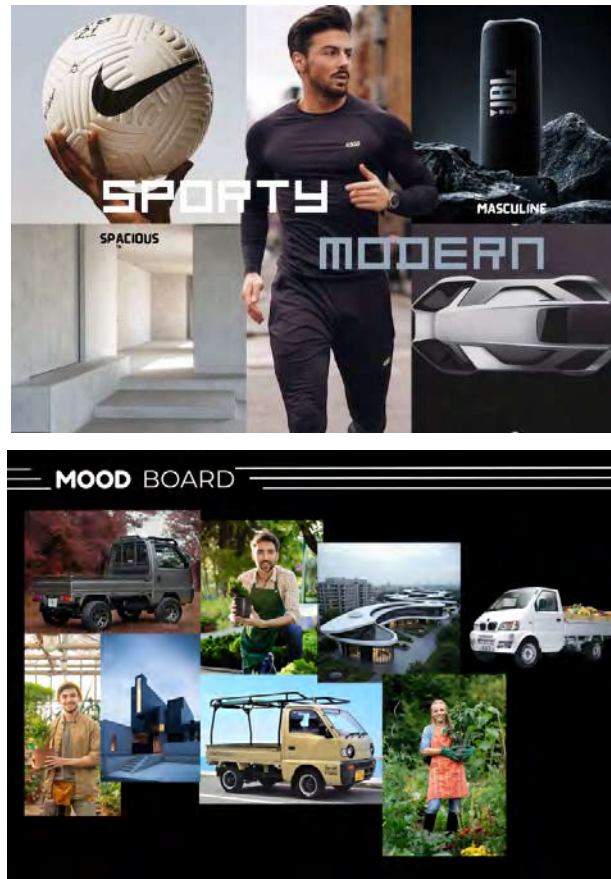


Figure 1.1 The picture of mood board for the inspiration

Rural and semi-urban farming environments today face increasing demands for sustainable, versatile, and efficient transportation. The PERODUA TerraX is a conceptual mini flatbed truck designed to support small-scale farmers with a compact, solar-powered utility vehicle. The TerraX is based on a small truck design and combines electric power with a flexible flatbed that can hold different farming tools and equipment, making it easier for farmers to grow plants and use their tools right from the truck. Drawing inspiration from rugged, nature-connected, and utilitarian aesthetics, the design reflects PERODUA's forward-looking approach to green rural mobility. The development process was shaped by visual inspiration boards, research on how farmers work, and studies on eco-friendly transportation, leading to a solution that combines practicality with sustainability for the future of farming transport.



Figure 1.2 The picture sketches development

MATERIALS AND METHODS

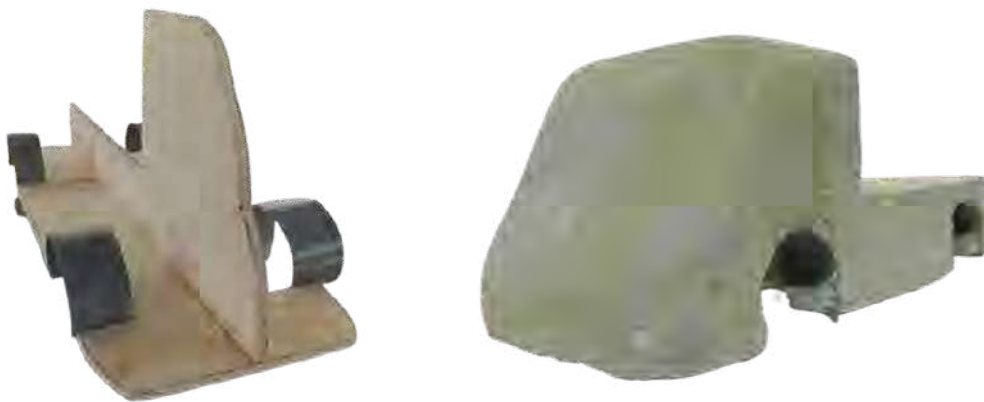


Figure 1.3 The picture of making the structure and the body of the model

The development of PERODUA TerraX adhered to a human-centered design (HCD) approach, beginning with observational field research, user behaviour analysis in agricultural settings, and initial concept ideation through sketching. The design focused on functional layout, ease of integration with farming tools, and a compact yet durable form suitable for rural terrain. Materials were chosen to support both effective prototyping and reflect sustainable design values in potential real-world applications. For the physical model, green foam was used to sculpt the truck body

and flatbed platform, allowing for efficient shaping of the compact vehicle form. PVC board and wood formed the internal structure to ensure rigidity and accurate scaling during model construction. After achieving the desired proportions, putty was applied to refine surface details, particularly the cab, wheel arches, and flatbed features. The surface was then sanded to enhance finish quality, followed by spray painting to reflect the truck's visual identity, combining earthy and industrial tones. The final model offered a clear representation of design intent, user ergonomics, and component proportions, supporting evaluation of its viability in real farming environments.

CONCLUSION & RECOMMENDATION



Figure 1.4 The picture of Environment (TerraX)

The PERODUA TerraX mini flatbed truck represents a forward-thinking solution for sustainable agricultural mobility in Malaysia. It combines technology with solar-assisted power and modular functionality tailored to the needs of small-scale farmers. The design integrates PERODUA's local brand identity with practical features that support efficient transport, in-field productivity, and environmental responsibility. This project highlights how rural mobility can evolve through thoughtful design and sustainable innovation.

For future development, it is recommended to explore enhancements such as interchangeable flatbed modules, IoT-enabled monitoring systems for crop or equipment integration, and improved weatherproofing for agricultural use. Collaboration with agricultural engineers, rural development agencies, and



PERODUA's production team could further refine the concept into a market-ready solution, aligning with Malaysia's broader goals for green technology and rural innovation.

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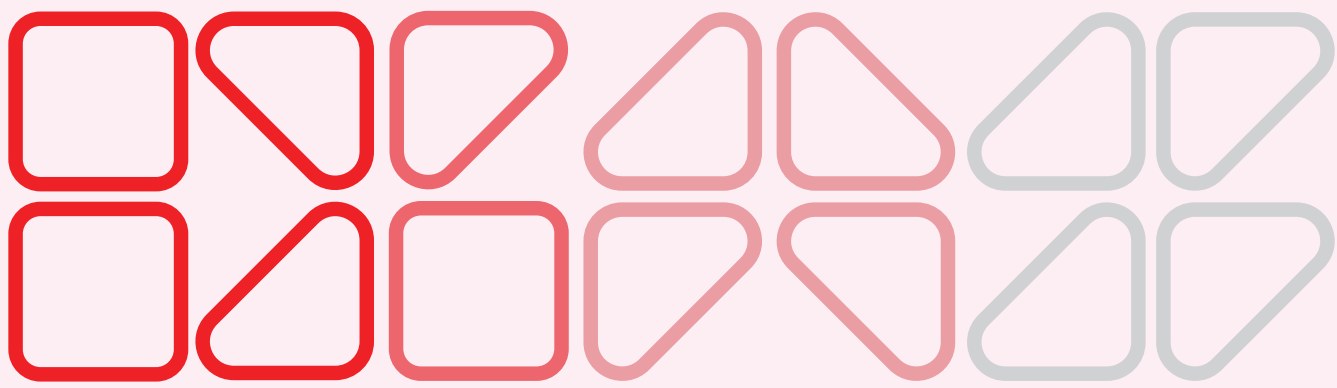
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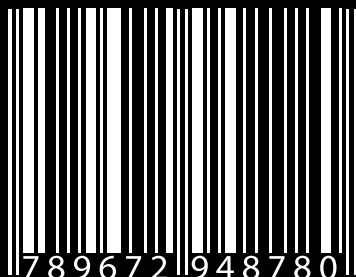
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