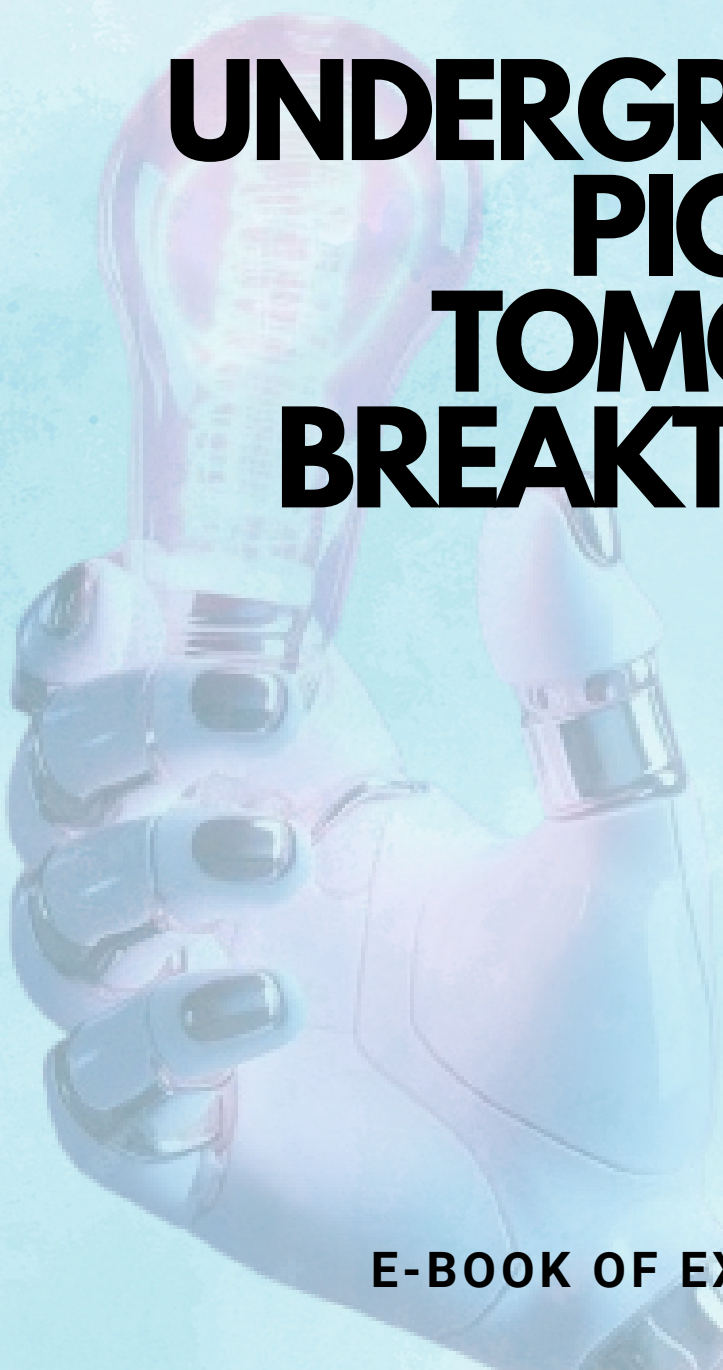


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**UNDERGRADUATES
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E-BOOK OF EXTENDED ABSTRACTS

UNIDASH: STUDENT-TO-STUDENT CAMPUS RIDE SERVICE

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ABSTRACT

UniDash is an intelligent mobile app designed to provide a safe, affordable, and convenient experience for both drivers and passengers. Students often pay high fares when using commercial ride-hailing apps, and sometimes raise safety concerns, as they may have to travel with unknown drivers, which can lead to discomfort and potential risk. Currently, there is no centralised platform connecting students who offer and seek affordable transportation services. Hence, many rely on informal communication through instant messaging apps or the university's confession pages, which causes inefficiency and lacks proper tracking and scheduling. Therefore, UniDash aims to offer affordable and convenient rides to students and implement a verification standard for safety purposes. The verification system enhances the sense of community and safety, as students know they are only interacting with peers from the same institution. The app employs a client-server architecture, where the mobile application itself serves as the client and the communication medium to the centralized cloud server, which processes requests and manages data. It also supports real-time communication via WebSocket or push notification services to ensure immediate updates for both passengers and drivers, which builds trust and enhances the sense of security among users. The uniqueness of UniDash lies in its exclusive focus on the student community. Students who need a ride can browse available drivers, compare prices, and book a ride that suits their needs. Contributing to decision support, UniDash helps students make better ride choices based on available data. Before accepting or offering a ride, students can view the driver's profile, ratings, ride histories, and passengers' reviews. Through its smart technology and thoughtful design, UniDash stands out as a meaningful and innovative solution in the campus transportation landscape.

Keywords: *mobile apps, intelligent system, e-hailing, students*

INTRODUCTION

Transportation has become one of the challenges for university students, as they need to move from one location to another, both on campus and in the surrounding areas. While ride-hailing services like Grab are widely available, the fare can sometimes be expensive for students, and safety concerns associated with traveling with unknown drivers further add to the discomfort. Despite the growing demand for student-friendly transportation solutions, there is currently no platform specifically designed to address these issues, connecting students with trustworthy and affordable rides. To bridge this gap, UniDash has been developed as a mobile application tailored to meet the students' transportation needs. UniDash connects students with peer drivers, providing a safe, cost-effective, and reliable way to travel.

The main objective of UniDash is to provide a centralised platform where students can easily book affordable rides that will ensure an accessible transportation option suitable for their budget. The platform also aims to foster trust among users by adding student verification and review systems, allowing students to make informed decisions based on feedback from their peers. UniDash also offers a safer and more reliable transportation solution by implementing advanced safety features such as real-time tracking, emergency alerts, and limiting rides to students only, creating a secure environment for users to travel with peace of mind. Figure 1 shows the flowcharts for both types of users: customers and drivers. Users need to

sign up upon using the application and use their student credentials to ensure it is exclusively for students, and then proceed to the next process, either to book or offer the ride-hailing service.

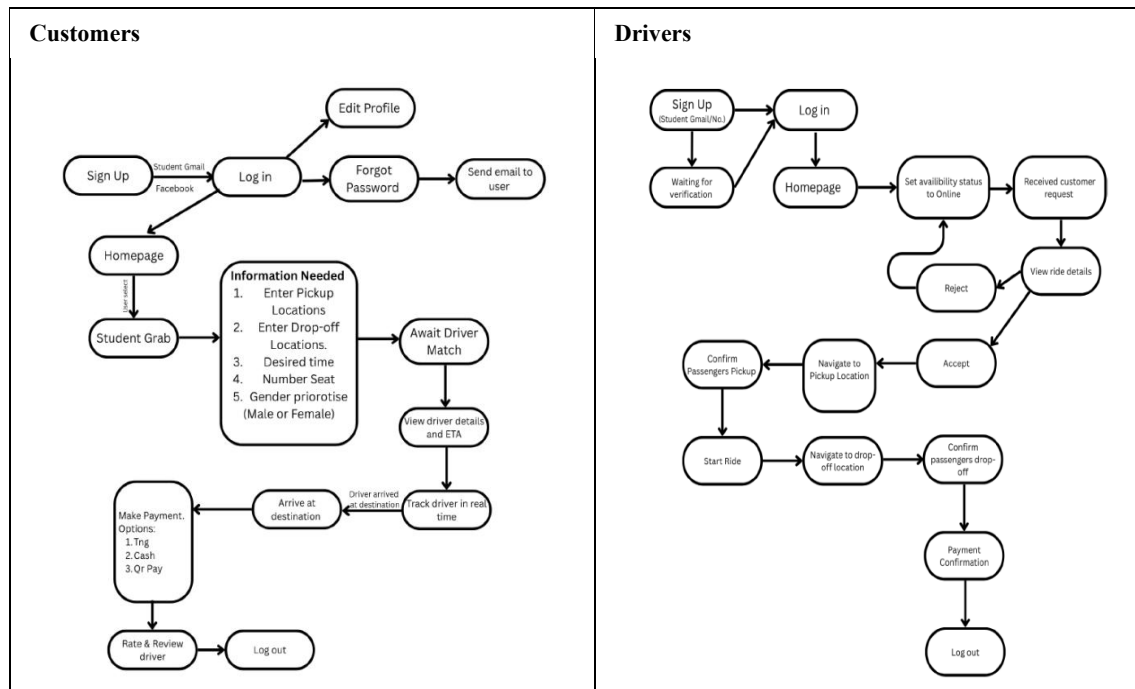


Figure 1: Flowcharts of UniDash for Customers and Drivers

UNIDASH FEATURES

The app runs on a client-server setup, where the mobile app acts as the client and connects to a central cloud server to handle requests and manage data. It also supports real-time communication through WebSocket or push notifications, allowing passengers and drivers to receive instant updates. This quick response helps build trust and gives users a stronger sense of safety. UniDash incorporates several advanced and intelligent technologies to provide a reliable and secure transportation experience tailored specifically for university students. One of the key technologies used in UniDash is real-time GPS tracking with a built-in map system. Unlike apps that rely on third-party navigation, UniDash offers its own map interface, displaying routes, estimated arrival times, and pick-up or drop-off points directly within the app. This makes the experience smoother since users don't need to switch between different apps. It also provides better control over the interface and allows for more flexibility in customising features (Ding et al., 2007). This feature enables users to view the live location of their driver or rider throughout the journey, ensuring transparency and fostering trust among users. By allowing users and campus security to monitor trips, it can reduce safety concerns. GPS tracking in mobile apps has become an increasingly important feature, enhancing users' trust and operational transparency (Zhang et al., 2020). UniDash also allows family members or campus security to monitor the ride if necessary, adding an extra layer of safety.

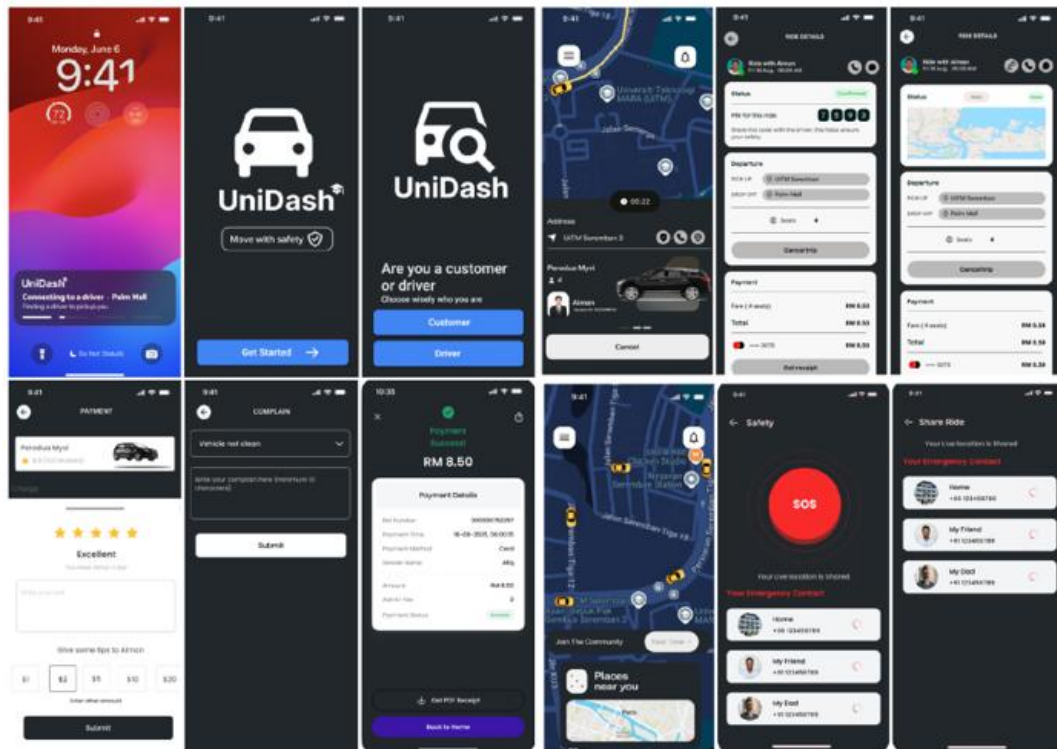


Figure 2: User Interface for UniDash Mobile Application

The primary users of UniDash are university students who require a safe, affordable, and convenient way to travel by connecting them with trusted student drivers from the same campus community. With features such as real-time tracking, community channels, emergency alerts, and rides that are restricted to students only, UniDash ensures a secure and supportive transportation experience while fostering a sense of community among students. The application includes a smart notification system that alerts users at every stage of the ride process. The system that provides automatic alerts sent to users regarding ride confirmation, arrival, start, and completion is to improve user satisfaction and engagement (Habermann et al., 2016). Figure 2 displays some user interfaces of UniDash for students who want to book a ride-hailing service.

PROJECT NOVELTY AND SIGNIFICANCE

The UniDash mobile application provides a solution to the challenge of finding a single platform that offers more affordable and safer transportation for university students. In the decision-making process, UniDash is integrated with intelligent features that help users make better ride choices based on available data. For instance, students can view a driver's profile, which includes their ratings, ride history, and user reviews, before accepting or offering a ride. Intelligent decision support system tools have proved to enhance operational efficiency and user satisfaction in transportation apps (Seng et al., 2023). The strength of UniDash lies in its exclusive focus on the student community. Unlike typical ride-hailing apps, all UniDash users are required to verify their status as a student by scanning their student card. By having this feature, it will build trust and enhance the sense of security among users. Additionally, it allows students to generate side income by becoming drivers themselves, further enriching the student experience.

UniDash offers additional features that distinguish it from other platforms. These include live tracking of rides, an emergency alert button, and a community system that automatically prompts in any emergency. These features are included for a safer, more convenient, and enhanced user-friendly experience, thus significantly improving the daily transportation options for students. Through its smart technology and minimalist design, UniDash stands out as a meaningful and innovative solution in the campus transportation landscape.

CONCLUSION AND FUTURE WORKS

UniDash was initially designed to address the common transportation challenges faced by students, such as high fares, difficulty in finding available rides around campus, and safety concerns. Offering a smarter, more affordable solution, UniDash moves forward by providing students with extra convenient features such as live ride tracking, emergency alerts, and the option to choose the driver's gender, enhancing comfort and security. As a forward-thinking innovation, UniDash is designed to significantly benefit students by offering a reliable and accessible transportation solution. To bring UniDash to another level, it is recommended to expand its user base by incorporating partnerships with universities and student organisations. Offering interesting promotions or incentives for new users could further encourage adoption. Additionally, integrating more advanced safety features, such as in-app video calls or driver background checks, could increase user confidence and safety. Expanding the app's features to include multi-destination rides or group bookings could also improve its usability for students with varying needs.

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