

New Technology In Automatted Vehicles To Improve Passanger Safty

Suhardjono¹, Priyono², Agus Sri Iswiyanti³, Dudi Parulian⁴, Arman Syah Putra^{5*}, Nurul Aisyah⁶

^{1,2,6}Faculty of Computer, University Bina Sarana Informatika, Jakarta, Indonesia

³Faculty of Economic, Universitas Gunadarma, Jakarta, Indonesia

⁴Faculty of Computer, University Indraprasta PGRI, Jakarta, Indonesia

^{5*}Faculty of Computer, STMIK Insan Pembangunan, Banten, Indonesia

*Corresponding author:

Email: armansp892@gmail.com

Abstract.

The background of this research is by prioritizing how to improve the safety of passengers on a vehicle with increased security so that if an accident occurs, the passenger does not suffer any injury. If necessary, it is not scratched on the body. With this research, it is necessary to increase security in order to provide maximum protection. for passengers and motorists. The method used in this study using the literature review method based on research that has been done previously so that it can be the basis for this research. With the literature review, the research will be able to find new research problems so that this research can be the latest research in order to serve as the basis for future research. In this study, we will find out how to protect passengers on a vehicle with ways that passengers can do so that the security side can be improved. Therefore, the use of security in a vehicle is very important so that it can help drivers and passengers in driving. In this study will produce a proposed system that can be used as a basis as a guide in order to protect passengers and motorists and can improve the safety side of driving.

Keyword : *Technology, Automated Vehicles, Improve Passenger, Safety.*

I. INTRODUCTION

Autonomous vehicles are built to help drivers and military missions be safe. Autonomous driving systems are used by dynamic driving tasks, where levels range from driving automation to fully automated driving. But drivers fail to take full advantage of the vehicle's autonomy because they cannot be fully trusted. Autonomous vehicles are uncertain and the risks associated with giving control. The problem is how for successful timing between humans and robots, the driver needs to be comfortable relying on vehicle autonomy [1]. This method is designed with semi-autonomous driving when the situational awareness of the driver by the vehicle. The experimental design uses three different communication content conditions of the vehicle. With participants as the object to measure the trustworthiness of autonomous vehicles, they created a visual simulation involving a non-driving task. Simulation with speed maintenance, lane maintenance on two highways with hard shoulders and automatic emergency braking capability, but may not be able to maneuver around road-stopping obstructions [2].

Overall the literature on belief in autonomous vehicles should demonstrate situational awareness. It is expected to see the level of trust in autonomous vehicles by respondents. The results show that the ability of drivers to understand what action is required of them before taking control is critical to encouraging the effective use of autonomy. The literature that describes the relationship between trust as trust and trust behavior, expects more trust in autonomous vehicles [3]. In the coming year, existing vehicles will change to automatic over time. Assistive technologies such as lane maintenance and adaptive cruise control are already available in new vehicle models. The years to come are likely to experience a gradual shift towards automation. Human drivers will eventually disappear from public roads. However, this is still a consideration of how the safety gained fundamentally changes the interaction between road users [4]. The way humans interact with automated vehicles will have an impact in the future. Problems will arise starting from the development of technology and its use in the future "what happens" and then capturing important aspects of different social experiences in relation to automated vehicles [5].

In the coming year there will be a lot of automatic vehicles on the highway, it makes the traffic light completely changed. Using the queuing principle that exists in the traffic light in the air which allows accuracy with the traffic system that will be filled by automatic vehicles [6]. Analyzing the interrelationship of the car with mobile robotics to achieve progress in the field of transportation. Automated vehicles replace road users, which is expected to improve vehicle safety. There will be drones to help and hybrid drive or HCCI technology which will have an effect in terms of fuel consumption [7]. Automated vehicles were created to help the military in unfavorable situations, such as driving, navigating and others. Soldiers or the military still do not trust the operation of automated vehicles. The military still considering the interrelationships between humans and automated vehicles This study is designed to know when the driver is taking over or relinquishing control and predict when the driver will take over again [8]. The control method for the UAV is proposed. Starting from the landing to the movement during the air. The controller is expected to be able to direct the UAV to the desired trajectory accurately, by simulating it in the form of good performance. Future work will be more experimentally focused [9]. Society should welcome autonomous vehicles as a remarkable innovation that is likely to transform transportation, especially in urban environments, while saving lives. It is incumbent on public health experts to keep pace with evolving technology, lead and actively participate in informed discussions, engage the wider community, advocate for rational and consistent regulation, systematically analyze ethical issues, and urge that results be measured and disseminated effectively. Only through early and consistent engagement will public health leaders ensure that their unique skills, knowledge, values, and perspectives lead in the important ongoing conversations about autonomous vehicles [10]. Parking for autonomous vehicles should not be close to where the passengers are arriving so it is not necessary. For example, for a large parking lot near the airport as is very common nowadays. In addition, the parking lot will be constructed in a more compact way as the vehicles will be parked tightly in the right position with almost no unused space. In addition, the parking slots will be marked according to the vehicle type and as a result the parking slots will not be as large as possible [11]. In this paper we suggest locations for these remote parking locations in Israel and explain why this remote parking for autonomous vehicles is essential to reduce the notoriously busy parking system [12]. This work reviews the literature and identifies important path-tracking models from a wide background and resources. This paper augments the literature with a comprehensive collection of important path-tracking ideas, guidance for their implementation and, most importantly, independent and realistic comparisons of the performance of these various approaches. Therefore, from the above discussion it can be concluded that the combination of both implicit and explicit tracking techniques will help in reducing the redundant data dependence of the sensor, as well as treating non-holonomic bottlenecks by computing the tracking error, which involves real-time computation of the sensor data. the position of the vehicle with respect to the road, taking into account the avoidance of obstacles such as people, walls and corridors, Given enough time sensors to process the read data in a timely manner [13].

Based on our findings, electric and autonomous passenger vehicles will represent a large and important new demand driver for the electric sector, but are not difficult vehicles to supply. In 2015, the U.S. Electrical Industry. added 18,754 MW of all types of power generation, a fairly representative level over the last 20 years. At an average load factor of 50%, this generation will supply 82 TWh, about a tenth of what LDV will need in 2050, but added in just one year [14]. A framework for predicting future demand both for travel and for new mobility services based on human mobility models and generational activities. This method provides predictions of demand for mobility services taking into account changes in age composition, age-related declines in individual travel requirements, increasing rates of driver license releases, and regional factors including LoS for alternative modes of transport. In addition, we estimate the impact of service type (whether private or shared) and multitasking. The model proposed in this paper rests on the assumption that urban structures and daily activities will not change in the future. Moreover, it does not consider how increased efficiency might affect demand. Therefore, we plan to conduct additional research to address this potential limitation [15]. Several tests and experiments were carried out on a small-scale car in succession to prove that the proposed system is practical and feasible. It turned out that the

system operates with acceptable errors. The proposed autonomous vehicle can function normally, the disabled, and the elderly. It can be used on roads and even inside facilities such as campuses, airports, and factories to transport passengers or cargo thereby reducing labor and costs [16]. Maximized lateral autonomous performance of tactical unmanned aerial vehicles by integrated passive and active morphing is considered. For this purpose a TUAV called ZANKA-III is simultaneously designed with an autopilot system to minimize the autonomous flight performance index above the magnitude of the passive and active morphing parameters and the P-I-D parameters totaling 7 parameters. Using stochastic optimization method i.e. simultaneous perturbation and stochastic estimate (eg SPSA) % 8 of energy saved. A significant improvement in lateral autonomous flight performance was obtained. The requested trajectory was successfully traced. The control surface obeys the constraints on it. The other outputs do not experience the fast and bulky behavior [17].

This paper presents MT to create a spatial map of ocean flow from motion integration errors accumulated along the vehicle trajectory. MT contains two main steps: Trajectory tracing and flow field estimation. Track tracing estimates nonlinear vehicle trajectories based on terrain flow estimates and vehicle headings. The flow plane estimate then solves a set of nonlinear equations to calculate the spatial distribution of the flow. MT validation and algorithm effectiveness were demonstrated using simulation and experimental data. By incorporating a parametric flow model using a spatial basis function, parametric MT produces a smoother field than non-parametric MT. Our experimental results show that MT is capable of producing flow field mappings in practical applications [18].

Localization of odor sources using MAV with gas vision and sensing has been achieved. MAV uses sight and smell with ingenuity and manages to localize the source of odors as living things can. Our approach doesn't even require GPS-based controls. The location accuracy of odor source localization based on the bio-inspired localization method was 63 cm, allowing identification of individuals. MAV is controlled very autonomously. The experiment simply blew the whistle, and the MAV began to hover, looking for the source of the odor, and continued to hover throughout the flight near the source of the odor. The MAV is light in weight and does not harm others even if it is accidentally dropped. This localization experiment is the first step towards a proof of concept for a hazard warning system. These results will be applied to make the community safer and more comfortable [19].

II. METHOD

Based on Figure 1 below, it will be explained that the research method used in this research in the first stage of the research method this time using the literature review method [20], which refers to previous research so that it can be the basic foundation for this research and then by using the proposed system, This system uses a proposed system in order to be able to update from an existing system and then produce a result that can be accounted for so that it can answer the research problem raised in this study [21].



Fig 1. Research Method

III. RESULT AND DISCUSSION

Driving from home. In the future era, to make it easier for drivers, especially trucks, driving technology from home will be created in order to save energy and costs during the trip. The driver will only be displayed on a computer screen where on the screen will be seen the road that will be traversed by the vehicle. Technology that will be used through internet media where the driver will enter an ID in order to be able to drive the vehicle. The working principle, firstly, the driver enters the id and password for the vehicle to be driven, after logging in, the type and type of vehicle to be used will appear. On the computer screen, an

appearance on the front window of the vehicle will appear which will make it seem as if the driver is in the car. The seat occupied by the driver will also be supported by technology which will feel like being in a real vehicle, for example when there is a hole through which the vehicle passes, the seat will automatically move according to the magnitude of the shock that occurs. In the steering, the weight will also be adjusted to the vehicle so that it will really be felt while driving.

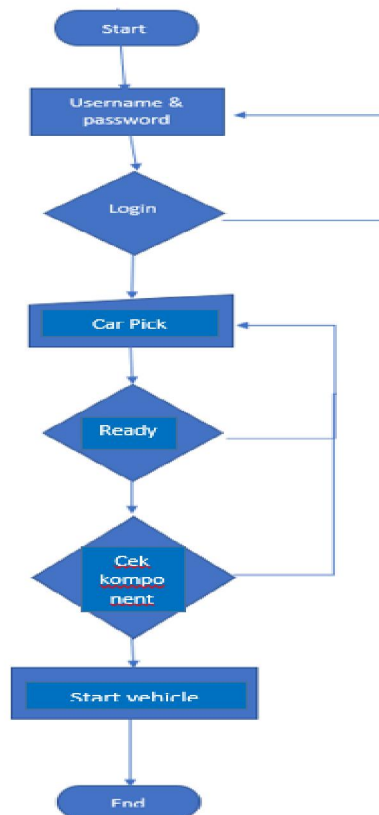


Fig 2. Flowchart Proposed Sistem

First, when you open the driver application, you will be asked to enter your username and password. If the password fails, you will be asked to re-enter the username and password. If successful, the driver will go to the main home to choose the type of vehicle. When choosing a vehicle, the driver cannot choose an existing vehicle arbitrarily. The system will check whether the selected vehicle is available or is being used by another driver. This is implemented so that there is no double driving. If the selected vehicle is available, the driver can use it. If the vehicle is not available or is being used by another driver, they will be asked to re-select. Before the driver can use the vehicle the system will test all existing components. Are all components connected or are there some components that are not connected. If the components are not connected then the system will not start the car engine. If all components are connected then the car can be used. The use of the car itself for 1 driver is determined from the car being run until it reaches its destination.

IV. CONCLUSION

With the existence of advanced technology like this, it is very helpful for humans in doing their jobs. With driving from home we can save the energy that we will use, Time efficiency because drivers don't need to go to their destination, Minimize costs, because drivers don't have to go so far for food costs and also lodging when tired, Drivers don't have to bother anymore to send something package because the driver is not directly in the car Can reduce the number of accidents on the highway And can reduce traffic violations because the car is made by following all traffic rules The car cannot be speeded because the car is designed to follow traffic rules The distance is too not too far. There is not much to add, in the future this automatic car can be added to the distance so that it can be used for long trips. For example, for sending packages out

of town and traveling for homecoming so that drivers can travel home safely and comfortably.

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