Central Police University (TAIWAN)

Vehicle doors suddenly opened from inside and vehicles unexpectedly cutting across the road are reproduced in VR. The simulators for training of safety driving in Taiwan.

Central Police University

URL https://www.cpu.edu.tw/

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Organization overview: Educational institute located in Taoyuan, Taiwan to cultivate executives of Taiwan Police. It was established in 1936 by merging Police Academy of Ministry of Interior, MOI and Chechiang Provincial Police School.

The police investigation building in Police University

Central Police University is an institute to train elite policemen established in 1936 and is located in Taoyuan, Taiwan. In the school building, it has 3 FORUM8 driving simulators for training. Dangerous situations specific in Taiwan such as "parked cars whose door is opened suddenly", "motorcycles changing lanes often", etc. are reproduced in training courses in UC-win/Road, and police officers are developing safe driving skills with it.

Central Police University in Taoyuan, Taiwan is the only police university in Taiwan cultivating elites in Taiwan police. The main role of police is to maintain security and traffic safety, and the university has a "Traffic Science" college to pursue this role. Students are studying traffic rules, how to treat and investigate accidents, traffic process management, and traffic safety management, and teachers are researching and teaching these fields.

In the police investigation building, 3 driving simulators that can be cooperated with FORUM8's VR (Virtual Reality) software "UC-win/Road" are used for the training. The university introduced 2 out of 3 simulators in 2015 and the last one in 2017. The purpose of the introduction of DS is the training of traffic such as traffic restriction and accident treatment, and the driving training of passenger car and police car.

"We used other simulator before but it was like a toy and did not have the enough sense of reality. That's why we introduced the FORUM8 system", explained Associate Professor Pi-Chang Chuang, the director of Traffic faculty.

Three FORUM8 driving simulators are placed at the police investigation building,

Taiwan police elites and instructors. The man who is sitting on the driving seat of the driving simulator is Associate Professor Pi-Chang Chuang, the director of Traffic faculty.

About 30 students of the Traffic Science college, 300 students from other colleges, and some from outside the university get training each year.

"Many of the graduates of the Central Police University become a leader of each police organization and sometimes lead 40 team members. Leaders are training their own driving skills here. Today, a dozen police officers who graduated from police academy are coming for the training", explains Mr. Pi-Chang Chuang.

Traffic accident accounts for a large proportion of the cause of death of Taiwan police officers. To improve driving skills is important to protect the safety of police officers.

This driving simulator can reproduce the motion of real vehicle precisely according to the physical law. When we hear that Taiwan police elites are using the driving simulator, many people may imagine they are training a driving skill to get in front of the criminal's car and stop it or the 180-degree turn required for car chase. However, they are using the driving simulators for really orthodox purpose of studying the safety driving in Taiwan city, mountain, and highway.

Young police officers actively working in Taiwan gathered at the training this day. First, an instructor Mr. Jia-Fu Chen explained the driving simulator. Young police officers in active service looked interested in it.

Mr. Jia-Fu Chen instructor giving a lecture before the training of driving simulator

FORUM8 driving simulator delivered to Central Police University

Next, the instructor himself became "an example" and drove in VR reproducing Taiwan city. He drove streets in Taiwan city first. To drive safely is not easy. Motorcycles have to travel along the edge of road but often change lanes and come in front of the vehicle in operation. Vehicles suddenly cuts across at an intersection with no signal, and the door of a parked car is suddenly opened. These traffic situations familiar with those who have traveled on a taxi in Taiwan are reproduced on UC-win/Road with reality.

The lack of concentration under these traffic conditions causes hazardous situations. The instructor caused an accident on purpose to explain how difficult to drive safely is.

The instructor showed "an example" with the driving simulator.

After that, young police officers drove the simulator one by one. Some of them are engaged in the crackdown on highways and showed an amazing steering control. Also, the only female police officer in the group actively tried driving.

"Courses created with UC-win/Road include main roads in Taiwan such as city road, residential area, skyscraper, highway, mountain road, and tunnel", said Mr. Cheng.

"The simulator has 25 scenarios reflecting the traffic situations in Taiwan. For example, the weather turns rainy when the car comes out of tunnel, an elderly coming out of behind cars and going across a crosswalk slowly, and vehicles don't obey the stop line in intersections without traffic lights."

It is said that 70 to 80 % of traffic accidents in Taiwan is caused by motorcycle. That's why motorcycles often appear in the scenarios.

Drivers can train the safe driving skill by handling these scenarios while driving towards the goal. There would happen no car chase but it can be said nobody knows what would happen on streets in Taiwan. Since the driving simulator let drivers experience many unusual scenes in a short time, they can acquire an ability to predict "what will happen next" under various circumstances while driving.

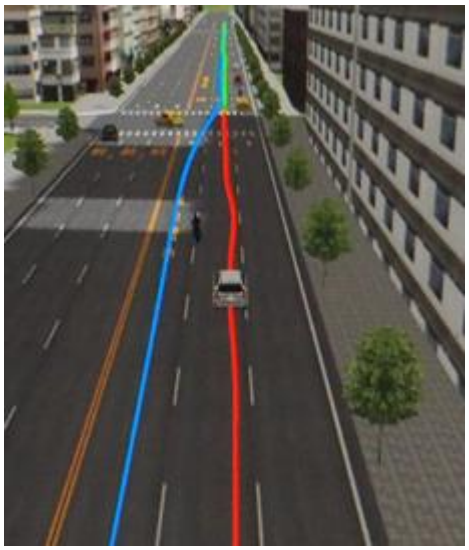
When drivers finish driving the course, the simulator displays the comprehensive driving skill evaluation and their driving skills in details such as the correct lane keeping, proper distance to the vehicle in front, how to use of steering, gas pedal, and brake, and avoidance of collision, etc.

Drivers can also get feedback by comparing their own driving course to the driving course taken by the model driver.

A female police officer having training on driving simulator

Drivers have to pay an attention to motorcycles in front because they suddenly change lanes and do other unpredictable behaviors.

Mr. Cheng was explaining the courses created in UC-win/Road. It has 25 scenarios including traffic situations specific in Taiwan.



Comparing the driver's own course selection to the model driving course to improve the driving skill is also a benefit of a driving simulator.

After driving, the comprehensive driving skill, car distance keeping, collision possibility and other details are scored.

Taiwanese drinks less than Japanese, but some drivers are drunk during driving. The investigation of the effect on driving given by drinking is one of the important usage purpose of this driving simulator.

Mr. Chuang said they are planning an experiment of drunk driving to investigate what effects beer, wine, and strong drink containing over 50% alcohol by volume give to drivers.

The drunk driving on real vehicle is dangerous, but driving simulators let students experience how driving operations change under the drunk condition even if the driver does not think he/she is drunk.

Police officers who have experienced the driving simulator will be able to explain hazards during driving convincingly at crackdowns.

This driving simulator was announced as "Safety driving simulator for university students" at "The 17th 3D VR Simulation Contest on Cloud" held in Tokyo in November 2018 and won the Idea Award. Mr. Pi-Chang Chuang has hanged the certificate and commemorative shield on the office wall.

The certificate and commemorative shield of Idea Award for "The 17th 3D VR Simulation Contest on Cloud"

The award winning was reported on the web site of the Taiwan government

About the utilization of future driving simulator, Mr. Chuang said "we want to develop our original scenario and analyze influence after traffic limitation. Realistic cityscape and buildings in UC-win/Road can be used for the prevention of terrorism or evacuation drill in other faculties. We want to add a motion platform to the driving simulator to build a more realistic driving environment".

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