第四，进行留言。可以给每一位分享自己故事的人进行留言。或许死后，所有的话都可以听进去吧。

网站的实现以现在的技术来说并非十分的困难。许多编程语言例如 Java, Python 等都可以进行网站开发。使用 Java 的 SpringBoot 框架或者 Python 的 Django 可以快速简单的进行 web 开发。网站更多需要考虑的还是信息的保密性与安全性，如何防止信息的泄露。让用户可以放心书写自己真实的故事。

目前这样的网站比较难搜索到，在中国部分存在的网站主要功能是作为清明扫墓使用。例如天堂网(http://www.tiantang6.com/)。这个网站虽然可以进行祭奠。也可以看到逝者简介或者影音。但是这些资料都是逝者死后亲友上传的。而不是自己书写自己的故事。可以说我这种想法的网站目前还找不到。这种形式并未对现实中的丧葬问题有实际的解决。更多的是一种对归宿的理解，让思想可以流传的更为长远。就如一句话所说，真正的死亡是世界上再没有一个人记得你。

УДК 005

面向单板滑雪竞速训练的数字孪生系统

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Summary. *Project study to snowboarding movement process as the main body, aiming at high speed, track complex competitive athletes, based on ali cloud server, the integrated use of motor intelligent precise perception technology, sensor data fusion and synchronous positioning technology, digital technology and the perception and fusion twin, cloud computing, cloud edge techniques and so on, can realize the connection between people and things management, The athletes' movement was intelligently sensed, the filtering algorithm was used to preliminarily process the data, the fastAPI asynchronous framework was used to build the database-cloud-end framework, the snowboarding process motion simulation model was formed, and the digital twin system was developed, that is, the intelligent optimization and visualization tool of the whole process glide trajectory. The construction of a unified quantified data set of movement parameters, the perception and monitoring of athletes' state, is helpful to realize the optimization and analysis of athletes' posture, and increase the scientific nature of training guidance.*

Accurate sensing technology for high-speed motion in complex outdoor environment:

Through snowboarding intellisense technology and snowboarding sport awareness and synchronization technology, data fusion for high speed, track complex competitive athletes, on the premise of not affect athletic performance, high speed, accurate and real-time motion perception data, and the present, on the basis of digital twin and provide data for optimization design of training scientific guidance and track support.

Data-driven digital twin technology:

The web interface of the digital twin system is built based on vue3.0, Javascript and echarts, which can realize the synchronization of data and motion trajectory, and realize the dynamic display and monitoring of trajectory and various kinds of data.

Build data sets and cloud applications based on Huawei Cloud IoT full stack cloud service:

To realize the one-button cloud on the device, to realize the summary and processing of a large number of experimental data with cloud computing as the core, and to develop some cloud applications such as snowboarding digital twin system.

FastAPI asynchronous framework was used to build the database-cloud-side framework:

Based on fastAPI, a python web asynchronous framework, the connection between the back end and the front end is built more efficiently and quickly. Using http protocol, the front end can fetch arbitrary data quickly and efficiently.

Technical Architecture.

Sensing layer: rtk real-time differential positioning device.

Transport layer: 4G network.

Control layer: Huawei cloud data center.

Software and software development environment: MySQL database, Ubuntu18.04, windows10 (64-bit).

Cloud Application: snowboarding digital twin system.

Snowboard slalom chase and other snow events with high speed and complex trajectories. In the future, it can also be applied to water conservancy industry, such as water area planning, water conservancy monitoring and water conservancy management. The use of UAV +RTK system in the field of water conservancy can improve the accuracy of information collection and timeliness of transmission of rain, water, drought and disaster information, make timely and accurate prediction and forecast of its development trend, and formulate flood control and drought control scheme. Digital twin technology can also be applied to smart cities to achieve green transportation, urban planning, urban illegal construction supervision, engineering environmental management, smart logistics, smart transportation, etc.

УДК 005

信息工程——面向自然语言的轨迹可视化系统

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Summary. *This project proposes a natural language oriented trajectory mining system, which seeks to design a location mining model for the problem of location sparsity and dynamic transformation of multiple geographic locations in natural language, and make the trajectory more intuitive by presenting the specific route on the map.*

Project Requirements. This project targets the investigation trajectory of infectious disease patients. Taking the COVID-19 epidemic as an example, In the epidemiological survey for confirmed patients, their travel trajectories are presented in natural language and cannot be visualized, making it difficult for the general public to intuitively determine whether they have intersected with confirmed patients or close contacts.

Features and innovations of the project. Location mining method based on deep learning. The project adopts a semantic trajectory extraction oriented to natural language, which can help people quickly extract the relevant information they need and make the information more intuitive. The proposed BiLSTM-CRF model is constructed by using bi-directional LSTM technology and equipped with the latest CRF model to extract semantic trajectories for natural language and to mine relevant location information using data mining techniques. The project keeps up with current events and is closely integrated with current technology needs.

Trajectory visualization method. Nowadays, we are in the era of information explosion, and the huge amount of information brings many problems to people, the main one is that it is difficult to extract effective information, such as the traditional epidemic trajectory is described in natural language and without visualization, when facing a large number of epidemic infected people's travel information, the trajectory overlapping routes cannot be extracted as soon as possible. If effective information on the spread of the epidemic can be extracted quickly, the relevant departments can study the spread trajectory of the epidemic more quickly and clearly, and plan for prevention and control.