objectives

海量数据查询的低效率，缺乏统一的数据规范，以及支持数据的时空特性的缺点是需要解决的严重问题。在本项目中，我们需要对具有时间属性或者空间属性的数据进行分析，将获得的结果通过模式识别和特征提取进行预测、比对之后得出相关结论。

Low efficiency in massive data query, lack of unified data specification, and short in supporting space-time property of data are serious problems to be solved today. In this project, we need to analyze data with space and time characteristics. Through pattern recognition and feature extraction, we use the obtained results for projections and comparison. And draw the relevant conclusions.

问题1：如何分析传感器采集到的海量的数据？

1、将传感器采集到的数据按照属性分类筛选

2、将处理后的数据拟合出关联函数

Question1：How to analyze the huge amounts of data the sensors collect?

1. Classifying the data according to property characteristic

2. Fitting the treated data to correlation function

问题2：如何利用数据拟合出较好的关联函数？

1、利用贝塞尔曲线处理数据

2、数据存储的底层采用NoSQL数据库

3、在存储数据时，对数据进行相关分类，给相关类加上语义词义tag

4、在算法中规避数据的遍历算法

5、对数据进行特征提取

6、对数据进行模式识别

Question2: How to use the data to fit better correlation functions?

1. Handling the data with Bernstein- Bézier

2. Storing the underlying data with NoSQL database

3. Classifying the data while storage, and add semantic meaning with tags

4. Avoiding traversal algorithm

5. Using data extraction

6. Using data pattern recognition

问题3：得出的关联函数有什么应用范围？

1、优化数据查询

2、对数据的预测有极大帮助

3、对数据的比对有极大帮助

Question3: Where can we use the correlation functions we obtained?

1. optimizing data query

2. Helpful for the data projection

3. Helpful for the data comparison

创新点与项目特色

本项目的创新点包括以下三个方面：

1. 传感器数据类型规范的设计与研制。

2. 数据模式提取。

3. 设计并实现一套分布式时空数据系统。

Innovation and project characteristics:

There are three aspects of innovation in our project:

1. Designing and manufacturing data type specification of sensor

2. Extracting data model

3. Designing and implementing a system of distributed spatial-temporal data