Zhongrui Fan

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Education

2014.9 - 2017.7 Master Institute of Computing Technology, Chinese Academy of Sciences

   Compute Application Technology(top10%)

2010.9 - 2014.7Bachelor Zhengzhou University

   Computer Science and Technology(top10%)

Personal Skills

- Familiar with Java Programming, Java Collection Framework JVM
- Familiar with common data structure and algorithms, common design patterns
- Familiar with basic database theory, having a knowledge of Redis, Postgre
- Presonal blog:http://blog.csdn.net/ymrfzr

Project Experience

2015. 10- now   Electronic Data Target Recognition System   Institute of Computing Technology   Designer & Developer

- *Project Description:* For large and real-time satellite data and AIS data, finish satellite recognition, provide intelligence and effective battlefield situation analysis.
- *Personal Responsibilities:*
  - **Data System architecture design:** use memory database and message queue to achieve the synchronization of multi-client information;
  - **Data preprocessing:** analyze and store the electronic data and AIS data compression package;
  - **Design and implementation target pre-recognition algorithm:** choose target feature and learning characteristic parameter and process electronic target pre-recognition;
- *Work results:* in practical usage scenarios, the system time decrease to 2min from 8 min in past system, the amount of system can withstand data increase more than 5 times, system target recognition accuracy rate increased by 5%.

2014.8 – 15.4   Marine Big Data Analysis platform   Institute of Computing Technology   Designer & Developer

- *Project Description:* With massive satellite data and ship AIS data, finish data analysis and entity mining, achieve the modeling of abnormal behavior of the ships and mining ship's abnormal behavior based on trajectory data.
- *Personal Responsibilities:*
  - **Real-time position data access:** analyze data packets, filtering noise data, cleaning the position data;
  - **Maritime traffic density calculation and analysis :** Design and implement the algorithm to perform a statistical analysis of the characteristics of a multi-dimensional traffic density;
  - **Design and implement algorithm to mining harbor and waterway:** use DBSCAN algorithm, for different types vessels, finish automatic learning parameters optimization and terminal mining and channel excavation;
  - **Build ship abnormal behavior model:** construct the model of anomaly evaluation algorithm.
- *Work results:* using the actual data of two years Chinese ship's actual AIS data and the international ship data, dock mining accuracy rate reached 93%, channel excavation accuracy was 90%. Support the discovery of abnormal ship behavior and alarm, abnormal vessel detection accuracy rate >= 70%; complete abnormal ship detection time <= 1min.

2015.4 - 10   Search Engine   Institute of Computing Technology   Designer & Developer

- *Project Description:* With access to specified data source, crawl data and realize of the search engine.
- *Personal Responsibilities:*
  - **Realization of the key technology of the system:** from the source data crawling data, inverted index, document relevance calculation, search results ranking, query auto completion and evaluation of search results;
  - **Design and implementation of web page clustering algorithm:** the use of KNN to achieve web page clustering, similar to the sim-hash algorithm based on weight ";
  - **Large scale short text classification algorithm:** for the realization of large-scale text fast and effective classification, design use word2vec and SVM algorithm to classify the text classification method based on Web page title;
  - **Generate dynamic abstract of web page:** needle to the user query as the center, based on user input query word Abstract extraction to show the relevance of the source text and the query.
- Work results: in 200 million page data, achieve the retrieval time is less than 0.7 s, short text classification accuracy is 3% higher than that of the baseline in the academic circles.

Awards

- Excellent Scholarship for Encouragement   ■ Bronze Medal at Henan Province Programming Contest