

范忠瑞

中国科学院 计算技术研究所 专项技术研究中心

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求职意向

数据研发工作; 软件开发工作

教育背景

2014.9-2017.7	中国科学院计算技术研究所	计算机应用技术	工学硕士
2010.9-2014.7	郑州大学	计算机科学与技术	工学学士

项目经历

2015.10-至今 **海运大数据分析平台** **中国科学院计算技术研究所** **核心研发人员**

- ◆ **项目介绍:** 建立供项目组内部使用, 并用于处理分析海运数据的一整套平台系统。
- ◆ **负责工作 (独立完成):** 维护数据库集群, 构建流式数据分析模块, 在此基础上实现实时计算功能;
- ◆ **主要方法:**
 - 基于 **Storm 框架**, 实现对应数据源的流式处理逻辑, 完成流式分析功能;
 - 利用 **内容缓冲、线程池、内存数据库**, 提高数据处理效率;
- ◆ **工作成果:** 实时场景下集群反应时间为毫秒级。

2015.4-2015.10 **船舶水运信息平台** **中国科学院计算技术研究所** **核心研发人员**

- ◆ **项目介绍:** 综合多方数据, 分析获取海上交通信息, 预测海运与经济走势相关度。
- ◆ **负责工作 (独立完成):**
 - 找出海上航运主要路线, 实现航道发现;
 - 挖掘船舶和航道联系, 用以识别船队及分析船舶异常。
- ◆ **主要方法:**
 - 采用 **决策树算法** 从整合清理过的航运数据库中选择轨迹特征, 从船舶数据库中选择船舶特征;
 - 使用 **层次聚类算法、DBSCAN 算法**, 对轨迹数据进行过滤、聚类;
 - 分析子航道属性, 根据船舶特征和轨迹聚类结果, 建立船队和子航道的对应关系。
- ◆ **工作成果:** 子航道识别准确率: 90%, 船舶航道对应准确率: 90%。

2014.8-2015.4 **电子数据处理系统** **中国科学院计算技术研究所** **核心开发人员**

- ◆ **项目介绍:** 接收卫星电子数据, 通过数据分析手段获取海事信息。
- ◆ **负责工作 (独立完成):**
 - 多数据源的数据规整化, 实现各项服务接口, 完成数据分析功能;
 - 挖掘舰艇船只之间的相似关系, 为识别敏感船只目标提供核心依据。
- ◆ **主要方法:**
 - 采用 **决策树算法** 对船舶数据进行船舶特征选择, 主要依据候选船舶特征与现有敏感船舶特征参数库;
 - 利用船舶特征, 采用 **朴素贝叶斯算法** 进行船只分类;
 - 提取观测船只与特征库船只的比较关系, 完成观测船只的匹配结果。
- ◆ **工作成果:** 船只分类准确率: 91%, 召回率: 90%; 船舶相似匹配准确率: 90%。

获奖情况

- ◆ 2011.10 优秀学生奖学金(Top 10%)
- ◆ 2012.05 河南省程序设计大赛铜奖

个人技能

- 熟悉 Java, C/C++, Python
- 熟悉基本数据挖掘理论和方法
- 熟悉基本数据结构和算法
- 熟练使用 Hadoop, Storm
- 英语: 通过 CET-6

Zhongrui Fan

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Objective

Data Mining Engineer, Software Engineer

Education

2014.9 - 2017.7	Master	Institute of Computing Technology, Chinese Academy of Sciences	Compute Application Technology
2010.9 - 2014.7	Bachelor	Zhengzhou University	Computer Science and Technology

Project Experience

2015. 10- now	Marine Big Data Analysis platform	Institute of Computing Technology	Designer & Developer
◆	<i>Project Description:</i> Establish a platform to handle marine data for our project team.		
◆	<i>Personal Responsibilities:</i> Maintain database cluster, construct data stream analysis module, and realize real-time calculation based on it.		
◆	<i>Major methods:</i> <ul style="list-style-type: none">■ Based on Storm framework, finish the stream processing corresponding to data source;■ Use buffer, thread pool, memory database to improve the efficiency of data processing;		
◆	<i>Results:</i> The reaction time under the cluster real-time scene is in milliseconds.		
2015.4 - 10	Ship water transport information platform	Institute of Computing Technology	Designer & Developer
◆	<i>Project Description:</i> Retrieve multi data sources, analysis and get maritime traffic information, forecast the correlation between maritime traffic and economic trend.		
◆	<i>Personal Responsibilities:</i> <ul style="list-style-type: none">■ Find out main lines of shipping in the sea, and realize the discovery of the channel;■ Mine links between ships and channels to identify the fleet and analysis of abnormal ships.		
◆	<i>Major methods:</i> <ul style="list-style-type: none">■ By Decision Tree algorithm to select ship feature of trajectory from the integrated and clean shipping database, and the vessel features from vessel data set;■ Use hierarchical clustering algorithm and DBSCAN algorithm to filter and cluster the trajectory data;■ Establish the corresponding relationship between fleet and sub channel, based on the clustering results of ship characteristics and trajectory.		
◆	<i>Results:</i> Sub segment recognition accuracy: 90%, Accuracy rate of matching between ship and channel: 90%.		
2014.8 – 15.4	Electronic Data Target Recognition System	Institute of Computing Technology	Designer & Developer
◆	<i>Project Description:</i> Receiving satellite electronic data, obtain maritime information through data analysis.		
◆	<i>Personal Responsibilities:</i> <ul style="list-style-type: none">■ Data normalization of multi-sources, and realization of service interface to complete data analysis;■ Analysis of maritime intelligence, and mine the similar relationships between vessels to provide the core basis for the identification of sensitive vessels.		
◆	<i>Major methods:</i> <ul style="list-style-type: none">■ Adopt Decision Tree Classification Model to select vessel features, based on the features of the candidate ships and the characteristic parameter of existing ships;■ Using Naïve Bayesian algorithm to classify the vessels, according to the characteristics of ships;■ Extract the comparative relationship between the observed ships and ships in storage, and finish the matching result of observed vessels.		
◆	<i>Results:</i> Vessel classification accuracy rate: 91%, Recall rate: 90%, Accuracy rate of ship similarity matching: 90%.		

Awards

- ◆ Excellent Scholarship for Encouragement (**top 10%**).
- ◆ Bronze Medal at Henan Province Programming Contest.

Personal skills

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|--|---|
| ■ Familiar with Java, C/C++, Python | ■ Familiar with basic machine learning theory and practice |
| ■ Familiar with data structure and algorithm | ■ Familiar with Hadoop and Storm practice ■ English: CET-6 |