Rui Li

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Education

Leiden University, Leiden, Netherlands **Oct 2021 - Expect Oct 2025**

PhD of Computer Science

Beijing Institute of Technology, Beijing, China **Sept 2017 - June 2020**

Master of Information and Communication Engineering
Coursework: Big data analysis, Information system , Machine learning

Beijing Institute of Technology, Beijing, China **Sept 2013 - June 2017**

Bachelor of Science in Information Countermeasure techniques
Coursework: C program, C++ program, Signal Processing

Experience

Summer School of Machine Learning, Israel Institute of Technology July. 2019 - Sept. 2019, Haifa, Israel

- Outline: Course of Machine Learning
- Main duties:
  Leaning 9 basic machine learning algorithms such as **K-means, KNN classifier** etc.
  Researched automatic classification of basic speech units that make up words based on **KNN Classifier, Naive Bayes Classifier and The Perceptron Algorithm** using TIMIT dataset. The accuracy achieving 85%,0.85%,0.82%, respectively.

Generation Investment Strategy Method Based on Machine Learning, Tsinghua University April. 2019 - Sept.2019

- Outline: Researched a credible and effective investment strategy generation system and explained the process of strategy generation.
- Main duties:
  Researched a multi-factor quantitative investment strategy generation system based on the random herd algorithm.
  Implemented an explainable framework based on **machine learning (SVM)** to support the the credibility of investment strategy.
- **Publication:** Random Herd Algorithm for Quantitative Factor Mining.(under review)

Global (Nanjing) AI Application Competition Sept. 2018

- Outline: In order to solve the problem of system resource waste caused by the information mismatch between the supply and demand sides, a model is developed to predict the driver and cargo volume of a certain region in the next seven days effectively.
- Main duties: Proposed BCKs-RM(Basis-Cycle-Keys Regression Model) to solve the cycle series prediction. The MSE of the predicted supply-demand relationships is 0.0072.
- Won the **No.1** in the competition of "prediction of supply-demand relationship of goods sources and adjustment between regions in the trunk logistics area".
- **Award: Winning Prize**

Mathematical Contest In Modeling Mar.2016, America

- Outline: Established a model of the temperature of the bathtub water in space and time to determine the best strategy the person in the bathtub can adopt to keep the temperature even

throughout the bathtub and as close as possible to the initial temperature without wasting too much water.
- Main duties:
  Established temperature field model and fluid field model.
  Established the geometric model and setting the boundary conditions.
  Building the constant temperature bathtub model and simulating in COMSOL Multi-physics successfully.
- **Award: Meritorious Winner**

An Explainable Android Malware Detection Method, Beijing Institute of Technology Mar. 2019 - Spet. 2019

- Outline: Proposed an explainable method for android malware detection via rule extraction from random forest and uncertainty strategy.
- Main duties:
  Proposed an explainable detection model that uses uncertainty strategy to reduce the number of rules based on information entropy and rule extraction from random forest to better explain the logic relationships between related features.
  Designed a time- and labour-saving Android malware detection system thanks to the **random forest algorithm** with no manual analysis. The Android malware detection rate is 94%.
- **Publication:** An Explainable Method for Android Malware Detection via Rule Extraction from Random Forest and Active Learning Strategy.(under review)

International Genetically Engineered Machine Competition, iGEM July. 2016-Nov.2016, Boston, America

- Outline: Researched breast cancer alarm method in the early stage based on flag miRNA155/21 in blood.
- Main duties: Researched the expression level of green fluorescent protein of the biological information such as miRNA155 based on key-lock model and Integrates model.
- **Award: Silver Award**

Awards

Winning Prize, Award on Global (Nanjing) AI application competition	Sept. 2018
Outstanding Graduates, Beijing Institute of Technology	June. 2017
3rd Prize, Award on English speaking competition in Beijing Institute of Technology	Dec. 2017
Silver Award, Award on International Genetically Engineered Machine Competition	Nov. 2016
Meritorious Winner, Award on Mathematical Contest In Modeling	Mar. 2016
1st Prize, Award on Schalorship	Sept. 2017
2nd Prize(4 times), Award on Schalorship	2013-2020
3rd Prize, Award on Schalorship	Sept. 2015

Skills

- Programming Languages: Python, Java, R, HTML, CSS, JavaScript
- Platform: Android, Linux, Windows

Extracurricular Activities

- Director of External Liaison Department, Student Union, School of Electronic and Information Engineering, Beijing Institute of Technology
- Youth Volunteer Service Team, Beijing Institute of Technology
- Youth League general branch, Beijing Institute of Technology
- Youth Volunteer, Tsinghua - Santander World Challenges of 21st Century Program
- Youth Volunteer, China League Two