Yufan Zheng

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Research Interests

I am interested in Time-series, Machine learning, Deep learning, Complex network, Evolutionary algorithms. My current focuses include:

- Epidemiological dynamics modeling.
- Decision optimization of epidemic prevention measures.
- Time series analysis and prediction modeling.

Professional Experience

Research Institute of Big Data and Artificail Intelligence (RIBDAI) Guangzhou, China
Nanfang College of Sun Yat-sen University **Manager: Prof. Choujun Zhan**
Research Assistant *Sep 2018 – Present*

Research on Film Industry

- Using crawler and data cleaning techniques, a global box office research database containing 13,737 films from 1980 to 2017 was established;
- An ensemble learning method in machine learning is used to build a general box office prediction model;
- The predicted evaluation result of $R^2$is 0.99.

Research on COVID-19 epidemic transmission

- A COVID-19 epidemic research database for 184 countries, 1241 regions or cities from December 8, 2019 to March 15, 2021 was established using crawler and data cleansing techniques;
- A new improved prediction model (RF-Bagging-BLS) was proposed to predict the cumulative number of COVID-19 infections in various countries and regions around the world, and the predicted evaluation result of R^2reached 0.99.

Publications

Peer-reviewed Journal Articles

- Zhan C, **Zheng Y**, Zhang H, et al. Random-Forest-Bagging Broad Learning System with Applications for COVID-19 Pandemic[J]. IEEE Internet of Things Journal, 2021. **(SCI, 2020 IF:9.936)**
- Zhan C, **Zheng Y**, Lai Z, et al. Identifying epidemic spreading dynamics of COVID-19 by pseudocoevolutionary simulated annealing optimizers[J]. Neural Computing and Applications, 2020: 1-14. **(SCI, 2020 IF:4.8)**

Conference Paper

- Wu S, **Zheng Y F**, Lai Z, et al. Movie box office prediction based on ensemble learning[C]//2019 IEEE Symposium on Product Compliance Engineering-Asia (ISPCE-CN). IEEE, 2019: 1-4. **(EI)**

Activities

IEEE International Symposium on Product Compliance Engineering-Asia Hong Kong, China
Attendee and Speaker *Oct. 2019*

Introduce the research situation of film box office prediction in detail and share how to establish the box office prediction model by using the method of ensemble learning. Exchange views and insight with scholars engaged in product safety promotion and smart city construction.

The 22th International Conference on E-health Networking, Application Shen Zhen, China
Attendee *Dec. 2020*

Engage and interact with researchers and professionals in the field of communication technology applications to find new solutions to improve health services and applications.

1. Blockchain Privacy Preserving Techniques, *The 36th CCF National Database Conference*, Jinan, China, Oct. 2019.
2. Towards Searchable and Verifiable Blockchain, *1st Workshop on Blockchain and Data Management at 35th IEEE International Conference on Data Engineering*, Macau, Apr. 2019.

3. When Query Authentication Meets Fine-Grained Access Control: A Zero-Knowledge Approach, *2018 ACM SIGMOD International Conference on Management of Data*, Houston, USA, Jun. 2018.

Awards

- National Scholarship *2019 – 2020*
- Second prize Scholarship(awarded to the top 6%) *2019 – 2020*

Certificates

- Provincial College Students' Innovative Entrepreneurial Training Plan Program, Box office forecasting based on big data and deep learning, Principal *2019 – 2020*
- Provincial College Students' Innovative Entrepreneurial Training Plan Program, Solar radiation estimation system based on sunshine duration and Planck's theorem, Participant *2020 – 2021*
- Provincial College Students' Innovative Entrepreneurial Training Plan Program, E-business strategy mining based on big data and machine learning, Participant *2020 – 2021*
- Software copyright, Data analysis and prediction system of epidemic infectious disease change based on machine learning *2020*
- Software copyright, Chinese film box office data analysis and prediction system based on machine learning *2020*
- Software copyright, Based vehicle flow detection system based on deep learning *2020*

Education

Nanfang College of Sun Yat-sen University Guangzhou, China
Bachelor of Computer Science and Technology *Sep 2018 – Present*

- **GPA** : 85.74 / 100 (3.46/5.0)
- **Core Curriculum** : Advanced Mathematics (89), Data Structure and Algorithm (92), Discrete Mathematics (91), Database Principles and Applications (87)

Skills

Programming Python(pandas, numpy, matplotlib, pytorch, scikit-learn), Java, C, Maltab, LaTeX
Tools Git, Linux
Languages English(CET4,469), Mandarin