Bingjie **Yan**

Software Engineer · Big Data

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"Sometimes it's the very people who no one imagines angthing of who do the things that no one can imagine."

Education

School of Computer Science and Cyberspace Security — *Hainan, China*

B.S. in Software Engineering Big Data — *Sept. 2018 - Exp. Jul. 2022*

- Got the honorary title of Hainan University Triple Good Student
- Got the first-class comprehensive scholarship of Hainan University
- Got the Outstanding Volunteer Service Model of Hainan University

Skills

Programming	C/C++, Python, JAVA, MySQL, LaTeX
Web	HTML5, JavaSript, JSP
BigData	Hadoop, HBase, Hive, ZooKeeper
Machine Learning	Pytorch, TensorFlow, OpenCV

Experience

Undergraduate Innovation and Entrepreneurship Project — *Hainan, China*

Principal & Member — *Mar. 2020 - PRESENT*

- Research on the new coronavirus CXR medical image recognition system based on the framework of federated learning
- Design of underwater sightseeing robot based on ROV technology and realization of its VR real-time viewing function

Extracurricular Activity

Young Volunteers Association of the School of Computer and Cyberspace Security, Hainan University — *Hainan, China*

Minister of Information and Publicity — *Sept. 2019 - Jul. 2020*

- Gained job scheduling ability.
- Participate in and organize many volunteer activities.

Cyberspace Security Association of Hainan University — *Hainan, China*

Vice President — *Sept. 2019 - Jul. 2020*

- Learned network security, network attack and defense related knowledge.

Robotics and Artificial Intelligence Association of Hainan University — *Hainan, China*

Vice President — *Jul. 2020 - PRESENT*

- Gained competition organization and planning skills.
- Learned about machine learning.

Honors & Awards

International

2017 **Silver Prize**, Asia-Pacific Informatics Olympiad — *Beijing, China*

Domestic

2019 **First Prize**, The 3rd Silk Road Robotics Innovations Competition — *Xi'an, China*

2020 **Third Prize**, The 10th MathorCup College Mathematical Modeling Challenge — *Shanghai, China*

2020 **Third Prize**, The 10th MathorCup College Mathematical Modeling Challenge — *Shanghai, China*

Paper

Encryption Algorithm for TCP Session Hijacking *ICAIS2020*

THIRD AUTHOR *2019*

- Distributed network of the computer and the design defects of the TCP protocol are given to the network attack to be multiplicative. Based on the simple and open assumptions of the TCP protocol in academic and collaborative communication environments, the protocol lacks secure authentication. In this paper, by adding RSA-based cryptography technology, RSA-based signature technology, DH key exchange algorithm, and HAMC-SHA1 integrity verification technology to the TCP protocol, and propose a security strategy which can effectively defend against TCP session hijacking.

An Improved Method for the Fitting and Prediction of the Number of COVID-19 Confirmed Cases Based on LSTM *Computers, Materials & Continua Vol.64, No.3, 2020*

FIRST AUTHOR *2020*

- New coronavirus disease (COVID-19) has constituted a global pandemic and has spread to most countries and regions in the world. Through understanding the development trend of confirmed cases in a region, the government can control the pandemic by using the corresponding policies. However, the common traditional mathematical differential equations and population prediction models have limitations for time series population prediction, and even have large estimation errors. To address this issue, we propose an improved method for predicting confirmed cases based on LSTM (Long-Short Term Memory) neural network. This work compares the deviation between the experimental results of the improved LSTM prediction model and the digital prediction models (such as Logistic and Hill equations) with the real data as reference. Furthermore, this work uses the goodness of fitting to evaluate the fitting effect of the improvement. Experiments show that the proposed approach has a smaller prediction deviation and a better fitting effect. Compared with the previous forecasting methods, the contributions of our proposed improvement methods are mainly in the following aspects: 1) we have fully considered the spatiotemporal characteristics of the data, rather than single standardized data. 2) the improved parameter settings and evaluation indicators are more accurate for fitting and forecasting. 3) we consider the impact of the epidemic stage and conduct reasonable data processing for different stage.