

Bingjie Yan

Federated Learning · Machine Learning · Big Data

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“Sometimes it's the very people who no one imagines anything of who do the things that no one can imagine.”

Education

Computer and institute of science and technology, Hainan University

Hainan, China

B.S., Software engineering, Big data branch

2018.09 - Exp. 2022.07

- GPA: 89.52/100 (3.67/4)
- Has won the honorary title of three-virtue Student.
- Has won the first-class comprehensive scholarship in Hainan University.
- Has won the honorary title of Hainan University volunteer service model.

Publications

FedCM: A Real-time Contribution Measurement Method for Participants in Federated Learning

IJCNN 2021(CCF-C)

First author.

To appear. Oral.

- Propose a method to evaluate and measure participant contributions in federated learning in real-time.
- This method is more sensitive to data quality and quantity than traditional methods.

An Improved Method for the Fitting and Prediction of the Number of COVID-19 Confirmed Cases Based on LSTM

Computers, Materials & Continua

First author.

2020.5

- Propose an improved method for epidemic number prediction using LSTM.

Experiments of Federated Learning for COVID-19 Chest X-ray Images

ICAIS 2021

First author.

To appear.

- First application of federated learning for identification and classification of COVID-19 medical images.
- Interpretation and visualization of convolutional layers using the Grad-CAM++ method.

Project

Innovative business practices & Competition

College students' innovative entrepreneurial practice project

Hainan, China

Host & Participate

2020.05 - PRESENT

- A study on CXR medical image recognition system for COVID-18 based on federated learning framework.
- ROV technology-based underwater sightseeing robot design and its VR real-time viewing function implementation.

Smart Image - Smart medical image recognition system based on federated learning

Hainan, China

Host

2020.03 - PRESENT

- Developed a medical image recognition software based on federated learning framework with GUI interface.
- Expand and aggregate multiple lung imaging datasets to identify up to 10 lung conditions.
- Improving system stability using multi-model fusion methods.
- Labeling of lesion sites with Grad-CAM++ and automated report generation.
- Assessment of each healthcare provider's contribution using the proposed FedCM methodology.

5G driverless city patrol car

Hainan, China

Participate

2020.05 - PRESENT

- Pavement crack detection and pedestrian detection with YOLOv5.
- License plate photo detection and recognition using OpenCV and SVM.

Open Source Project

FedMedical:PaddleFL-based Federated Learning Medical Image Recognition Software

[GitHub link]

Owner

2020.11 - PRESENT

- Distributed Deployment and Federated Learning Simultaneous Training with PaddleFL Framework.

Mid-air Draw:Gesture Recognition and Tracking based on YOLOv5

[GitHub link]

Owner

2020.09 - PRESENT

- Hand gesture recognition and hand key point recognition and tracking using YOLOv5, presenting the results with OpenCV and image drawing.

Honosr & Rewards

International

2017 **Silver**, The asia-pacific informatics olympiad

Beijing, China

National

2019 **First prize**, The third session of the silk road robot competition

Xi'an, China

2020 **Second prize**, Club cup Chinese college students' mathematical modeling competition of higher education

China

2020 **Individual second prize**, Chinese universities computer competition - team programming ladders

China

2020 **Bronze**, The sixth China international "Internet Plus" college students' innovative entrepreneurship competition division

China

2020 **Third prize**, Chinese universities computer competition - Artificial intelligence creative race

Hangzhou, China

Provincial

2020 **Special award**, Chinese universities computer competition - team programming ladders

Hainan, China

2020 **Gold & Sliver**, The sixth China international "Internet Plus" college students' innovative entrepreneurship competition division - Hainan division

Hainan, China

2021 **First prize**, Chinese universities computer design contest - Hainan division

Hainan, China

2020 **Second prize**, Chinese universities computer competition - Artificial intelligence creative race - South China division

Hainan, China

2021 **Third prize**, "Challenge cup" Chinese college students' extra-curricular academic competition - Hainan division

Hainan, China

Skills

Programming languages Python, Java, C++

Machine Learning PyTorch, OpenCV

Robotics ROS Melodic

Big data Hadoop, HBase, Hive, ZooKeeper, Storm, Kafka, Sqoop, Flume

Front-end Springboot, Mybatis, Flask

Extracurricular

The IEEE Hainan University student branch

Hainan, China

President

2021.03 - PRESENT

- Participation in cutting-edge academic conferences
- Learn about cutting-edge academic developments

Association of Robotics and Artificial Intelligence, Hainan University

Hainan, China

Vice President

2020.07 - PRESENT

- Learn about machine learning.
- Organize group members to participate in and prepare for related competitions and write academic papers.
- Conduct machine learning sharing sessions and lectures.

**Youth Volunteer Association, School of Computer Science and Technology,
Hainan University**

Head of Press and Publicity Department

- Participate in various volunteer activities.
- Enhance leadership and work distribution skills.

Hainan, China

2019.09 - 2020.07

Network space safety association, Hainan University

Vice President

- Learn about network security.
- Understand and carry out related work such as preparation of association activities.

Hainan, China

2019.09 - 2020.07