

# HUANG Zhirui

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## Education

### South China Agricultural University

Guangzhou, Guangdong, China

BACHELOR DEGREE IN SCIENCE

Sep. 2014 - Jun. 2018

- Major in Information and Computing Science.
- Belong to Department of Mathematics, College of Mathematics and Informatics.
- GPA:4.12/5.00(91.2/100). Academic Ranking: 3/86.

## Honors & Awards

### INTERNATIONAL

- Apr. 2018 **Meritorious Winner (Top 10% around the world)**, U.S. The Mathematical/Interdisciplinary Contest in Modeling
- Apr. 2017 **Honorable Mention**, U.S. The Mathematical/Interdisciplinary Contest in Modeling
- Apr. 2016 **Honorable Mention**, U.S. The Mathematical/Interdisciplinary Contest in Modeling
- Dec. 2015 **(China Regional) National Second Prize**, Global Management Challenge
- Dec. 2016 **(China Regional) National Third Prize**, Global Management Challenge

### DOMESTIC

- Aug. 2016 **National Second Prize**, CSEE Cup 2016 National University Students Electrical Math Modeling Competition
- Oct. 2016 **The Second Prize**, China Undergraduate Mathematical Contest in Modeling
- Dec.2017 **Candidate (Rank 5 in candidates)**, China National Scholarship
- Mar.2018 **The First Class Scholarship (Rank 1/949 in the College)**, Scholarship of South China Agricultural University
- Dec.2017 **The First Class Scholarship (Rank 7/968 in the College)**, Scholarship of South China Agricultural University
- Dec.2016 **The Second Class Scholarship**, Scholarship of South China Agricultural University
- Dec.2015 **The Second Class Scholarship**, Scholarship of South China Agricultural University
- Dec.2018 **The Third Class Scholarship (Top 2% in the College)**, Information Technology Scholarship of WENS FOODSTUFF GROUP

## Publications

WU Si-mian, WEI Fu-yi and **HUANG Zhi-rui** et al., "**Friend Recommendation Method of Weighted Networks Based on Value and Match**," in 3rd Annual International Conference on Information System and Artificial Intelligence (ISAI 2018), published in (IOP Conference Series) Journal of Physics: Conference Series (JPCS), indexed by EI Compendex and CPCI.

**Zhirui Huang**, Pengfei Liu and Xiaxu He et al., "**Mobile Data Mining System based-on Cloud Computing**," in 2018 IEEE 3rd International Conference on Signal and Image Processing (ICSIP 2018), published into conference proceedings by IEEE, indexed by IEEE Xplore, Ei Compendex and Scopus..

Pengfei Liu, Duxian Nie, Xiaxu He, Weifeng Zhang and **Zhirui Huang** et al., "**Sentiment Analysis of Chinese Tourism Review based on Boosting and LSTM**," in 2019 International Conference on Communications, Information System and Computer Engineering (CISCE 2019), published in the IEEE CS CPS (Conference Publishing Services), indexed by IEEE Xplore, Ei Compendex and Scopus..

## Projects

### Image Generation based on Generative Adversarial Nets (Undergraduate Thesis)

Using Python programming language and tensorflow framework to implement the four different GANs for image generation on the classic datasets, including MNIST dataset and CIFAR-10 dataset.

### Convolutional Neural Networks for Sentence Classification

Using Python programming language and tensorflow framework to implement the CNN for sentence classification in the classic paper of Yoon Kim.

## Presentation

### 2018 IEEE 3rd International Conference on Signal and Image Processing

Shenzhen, China

ORAL PRESENTER

Jul. 2018

- Hosted by Shenzhen Research Institute, Southeast University, China. Sponsored by IEEE. Supported by Chaoyang University of Technology (Taiwan, China) and North China University of Technology (Beijing, China).
- Introduced the Mobile Data Mining System based-on Cloud Computing.

## Experience

### Friend Recommendation Method of Weighted Directed Graphs Based on Value and Match

Guangzhou, China

CORE MEMBER

May.2016 - Dec.2017

- Supported by **National Collegiate Innovation and Entrepreneurship Project, China.**
- **Data Preparation:** Automatically acquired users' data from a China's large Q&A platform, ZHIHU, by using Web Crawlers technique under the SCRAPY Framework of Python.
- **Directed Graph Model:** In the aspect of value, the directed graph model of the value was established by "the number of answers" and "point of praise", so as to calculate the users' value scores. In order to modify the value score of zero in the model, the material diffusion principle was used.
- **Undirected Graph Model:** In the aspect of matching, the undirected graph model was established to calculate the users' similarity through "topic of concern" and "industry", simulated the similarity of user pairs by using probability distribution and established likelihood function. Using the "EM" algorithm to estimate the function parameters, in order to calculate the users' matching scores.
- **Friend Recommendation Algorithm:** The friend recommendation algorithm was obtained by combining the directed graph model and the undirected graph model.

### Mobile Data Mining System based-on Cloud Computing

Guangzhou, China

CORE MEMBER

Jan.2018 - Mar.2018

- Based on the traditional mobile data mining project, we combined cloud computing and proposed and implemented the MobileWeka2 model based on cloud computing.
- We use the Java programming language to implement the MobileWeka2 model on the Android platform and conducted different data mining experiments on multiple data sets to prove its feasibility.
- Supported by 2015 annual discipline construction project in Philosophy Social Sciences "12th Five-Year" planning of Guangdong Province; Natural Science Foundation of Guangdong Province, China and **National Natural Science Foundation of China.**

### Sentiment Analysis of Chinese Tourism Review based on Boosting and LSTM

Guangzhou, China

PRINCIPLE MEMBER

Jan.2018 - Mar.2018

- **Data Preprocessing:** Cleaning of text data. Segmentation (using jieba or nltk) and vectorization (using word2vec) of text data in Python.
- **The Class-imbalance Problem:** Compared many different methods in Machine Learning and Deep Learning.
- **Machine Learning:** Trained multiple machine learning models including Support vector machine (SVM), Stochastic gradient descent (SGD), Random forest (RF) and Multilayer Perceptron (MLP) as the baselines.
- **Deep Learning:** Trained Long Short-Term Memory (LSTM) model for the text sentiment analysis.
- Supported by Natural Science Foundation of Guangdong Province, China; **National Natural Science Foundation of China**, etc.

### The Chinese University of Hong Kong (Shenzhen)

Shenzhen, China

RESEARCH ASSISTANT AND TEACHING ASSISTANT

Sep. 2018 - Present

- RA (Sep. 2018 - Aug. 2019). Laboratory: Network Coding Lab. Supervisor: **Prof. Shenghao Yang.**
- TA (Sep. 2018 - Jan. 2019). Course: Elementary Real Analysis. Instructor: **Prof. Wei-Ming Ni.**
- TA (Jan. 2019 - May. 2019). Course: Optimization II. Instructor: **Prof. ZHANG Shuzhong.**
- TA (Sep. 2019 - Present). Course: Elementary Real Analysis. Instructor: **Prof. Li Yutian.**
- TA (Sep. 2019 - Present). Course: Numerical Analysis. Instructor: **Prof. He Dongdong.**

## Extracurricular Activity

### The PIA Academic Group

South China Agricultural University

PRESIDENT

Jan. 2017 - Jan. 2018

- An academic research group of students in SCAU, whose members were selected by examination and knock-out system and achieved national or international awards over 30 times in Computer Science, Mathematics, Statistics and EE area.

### The Financial Association

South China Agricultural University

PRESIDENT

Sep. 2016 - Sep. 2017

- An academic association of students in SCAU, which regularly plans and organizes financial school-wide competitions.

### The National Outstanding Summer Camp of the School of Mathematics

Sun Yat-Sen University, China

PARTICIPANT

Jul. 2017