WU ZHENGDONG
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EDUCATION

NanFang College of Sun Yat-Sen University, Electronic and Software Engineering Guangdong, China
Bachelor of Engineering Sep 2016 - Jun 2020

- GPA 84.96/100, Major in Computer Science and Technology
- Core Courses: Data Structures and Algorithms (90), Software Engineering (92), Cloud Computer (93), Advanced Mathematics (89), Principle and Application of Database (89)

AWARDS AND PRIZES

- Outstanding Engineer (top 5%), 2020, awarded by Electronic and Software Engineering, NanFang College of Sun Yat-Sen University.
- Accomplished the provincial entrepreneurial innovation project organized by Guangdong Province (2019): "Analysis and Research on the Information Dissemination of Domestic Large-scale Live Broadcasting Platforms".
- Outstanding Student Award, 2018, awarded by Electronic and Software Engineering, NanFang College of Sun Yat-Sen University.
- Outstanding Student Award, 2017, awarded by Electronic and Software Engineering, NanFang College of Sun Yat-Sen University.

CONFERENCE ACTIVITIES

- Participated in IEEE 22th International Conference on E-health Networking, Application & Services (HEALTHCOM 2020) held in Shenzhen, China, and delivered an oral presentation.
- Participated in IEEE 14th International Conference on Intelligent Systems and Knowledge Engineering (ISKE 2019) held in Dalian, China, and delivered an oral presentation.

PUBLICATIONS

Peer-reviewed Journal Articles

- Zhou, J., Cheng, N., Xing, J., **Wu, Z.,** Li, L., Wang, B., Hei, Z., & Zhou, S. (under review). Perioperative Methylprednisolone was a risk factor for postoperative pulmonary complications in elderly patients undergoing hip fracture surgery. The Journal of Arthroplasty.
- Zhang, Y., Yang, D., Liu, Z., Chen, C., Ge, M., Li, X., Luo, T., **Wu, Z.,** Shi, C., Wang, B., Huang, X., Zhang, X., Zhou, S., & Hei, Z. (2021). An explainable supervised machine learning predictor of acute kidney injury after adult deceased donor liver transplantation. Journal of Translational Medicine.
- Zhan, C., Li, B., Zhong, X., Min, H., & **Wu, Z.** (2020). A model for collective behaviour propagation: a case study of video game industry. Neural Computing and Applications, 32(9), 4507-4517. SCI.

Conference Papers

- Zhan, C., **Wu, Z.,** Wen, Q., Gao, Y., & Zhang, H. (2021, March). Optimizing Broad Learning System Hyper-parameters through Particle Swarm Optimization for Predicting COVID-19 in 184 Countries. In 2020 IEEE International Conference on E-health Networking, Application & Services (HEALTHCOM) (pp. 1-6). IEEE.
- **Wu, Z.,** Wu, F., Chai, J., Zhan, C., & Yu, Z. (2019, November). Prediction of Daily Precipitation Based on Deep Learning and Broad Learning Techniques. In 2019 IEEE 14th International Conference on Intelligent Systems and Knowledge Engineering (ISKE) (pp. 513-519). IEEE.
- Zhan, C., Wu, F., **Wu, Z.,** & Chi, K. T. (2019, May). Daily Rainfall Data Construction and Application to Weather Prediction. In 2019 IEEE International Symposium on Circuits and Systems (ISCAS) (pp. 1-5). IEEE.

RESEARCH EXPERIENCE AND ACADEMIC ACTIVITIES

Guangzhou Aid Cloud (Guangdong Traditional Chinese Medicine Big Data Center) Guangzhou, China
Medical Clinical Data Analyst Sep 2020-Aug 2021

Medical clinical data study: Responsible for clinical data analysis in the Grade III Level A hospitals in China, using statistics, machine learning, and causal inference techniques to build a clinical predictive model and explore the impact of independent risk factors on outcome events in clinical research, and use deep learning to recognize oral pathology images and predict hypotension waveforms.

- Cooperate with clinicians to explore the application of machine learning in clinical medicine, develop clinical research ideas using machine learning, and co-author academic papers.
- Build a clinical medical interpretability research framework based on machine learning and SHAP: *https://github.com/ugggddd/ClinicalTools*.
- Co-authored paper in press: *An explainable supervised machine learning predictor of acute kidney injury after adult deceased donor liver transplantation*, which has been accepted by the Journal of Translational Medicine.
- Co-authored paper under review: *Perioperative Methylprednisolone was a risk factor for postoperative pulmonary complications in elderly patients undergoing hip fracture surgery*.

Hong Kong Pong Yuan Group (HKPYG) Hong Kong, China
Team Leader Apr 2020-Aug 2020
Enterprise data analysis project: Through Exploratory Data Analysis (EDA) and Data Enhancement (DE) methods, the problem of data imbalance and small sample size in the insect data set was solved. Simultaneously, the improved version of the convolutional neural network Densenet-121 was used to classify the insect dataset. The accuracy rate, which was originally less than 70%, is increased to 85.7%, which meets the needs of the industry.

- Lead team members to carry out literature research on insect classification, collect data on Spodoptera frugiperda, and use the Densenet-121 network structure model to solve the current pest classification problem in the agricultural field, which improves the accuracy of pest classification by 15%.
- Achievement: Won a bonus of RMB 25,000 and a job offer in Hong Kong Science and Technology Park.

NanFang College of Sun Yat-Sen University, Big Data and Artificial Intelligence Center (BAC) Guangdong, China
Research Assistant to Prof. Choujun Zhan (Electronic and Software Engineering) Sep 2018-Jun 2020
A forecasting research on daily precipitation in the real-world dataset: Through the collection, cleansing, and reconstruction of the National Oceanic and Atmospheric Administration (NOAA) dataset which contains the daily weather information that is recorded by over 100,000 observation sites worldwide from 1800 to 2017, an integrated rainfall forecasting model was proposed for multi-site predictions with kriging methods and utilized the State-of-the-art Deep Learning (DL) and Broad Learning System (BLS), which can reach an accuracy of 86.9%.

- Led a team to investigate rainfall-related literature and exploit spiders to gather the NOAA dataset.
- Collected, cleansed and reconstructed the messy weather dataset, made it into a new dataset that can be directly imported into Machine Learning (ML) models, and will be released to the public in the future.
- Wrote a paper named *Daily Rainfall Data Construction and Application to Weather Prediction*: A pilot study which has been accepted by ISCAS 2018.
- Wrote a paper named *Prediction of daily precipitation based on deep learning and broad learning techniques*: A pilot study which has been accepted by ISKE 2019.

ADDITIONAL INFORMATION

Research Interests
My main methodological interest lies in machine learning, deep learning, data mining and causal inference with their applications in healthcare, clinical predictive models and bioinformatics.

Language Skills
Preparing for the IELTS test

Computer Skills
Python (PyTorch, TensorFlow, Scikit-learn, SHAP), Java, C, R, MATLAB, Git, Linux, LaTeX