YIKUN OU

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EDUCATION

Step. 2019 – June 2022 **MSc | Management | Management Science & Engineering**

- Shenzhen University (SZU), Shenzhen, China
- **GPA: 3.43/4.0 Rank: 7/17**
- Research: A Semi-supervised Bacterial Heuristic Feature Selection Algorithm for High-Dimensional Classification with Missing Labels.
- Supervisor: Prof. Hong Wang
- Research Group**:** Intelligent Management & Cross Innovation group lead by Prof. Ben Niu**,** which focuses on the intersection of artificial intelligence, big data analysis and processing, information systems and information management, intelligent healthcare, and other multidisciplinary fields.

Step. 2015 – Jun. 2019 **BSc | Management | Electronic Commerce**

- Southwest University of Science and Technology (SWUST), Sichuan, China
- **GPA: 3.88/5.0 Rank: 1/70**
- Dissertation: Operation performance evaluation of China listed e-commerce based on factor analysis
- Supervisor: Prof. Pang Jiangang

PUBLICATIONS

Journal Paper in progress

[1] Hong Wang (*Advisor*), **Yikun Ou***, Yixin Wang, Tongtong Xing, Tan LiJing*. "A Semi-supervised Bacterial Heuristic Feature Selection Algorithm for High-Dimensional Classification with Missing Labels." ***International Journal of Intelligent Systems,* JCR Q1, IF 8.993, *Forthcoming.***

Conference Publications

[1] Hong Wang *(Advisor)*, **Yikun Ou**, and Yixin Wang*. "A Multi-objective Structure Variant Bacterial Heuristic Feature Selection Method in High-dimensional Data Classification." In *International Conference on Data Mining and Big Data*, pp. 342-357. Springer, Singapore, 2021. [PDF][Link]

[2] Hong Wang *(Advisor)*, Yixin Wang, **Yikun Ou***, and Ben Niu. "Bacterial Foraging Optimization with Leader Selection Strategy for Bi-objective Optimization." In *International Conference on Swarm Intelligence*, pp. 523-533. Springer, Cham, 2021. [PDF][Link]

[3] Hong Wang *(Advisor)*, Yixin Wang, Ting Guo, Yibin Wang and **Yikun Ou***. "An Empirical Study of Social E-commerce Platform on Users' Intention: Take WeChat E-commerce Group as an Example." In *2021 12th International Conference on E-business, Management, and Economics*, pp. 54-61. 2020. [PDF][Link]

[4] Hong Wang* *(Advisor)*, and **Yikun Ou**. "An Adapting Chemotaxis Bacterial Foraging Optimization Algorithm for Feature Selection in Classification." In *International Conference on Swarm Intelligence*, pp. 275-286. Springer, Cham, 2020. [PDF][Link]

[5] Chen, Ming, **Yikun Ou**, Xiaojun Qiu, and Hong Wang* *(Advisor)*. "An Effective Bacterial Foraging Optimization Based on Conjugation and Novel Step-Size Strategies." In *International Conference on Artificial Intelligence and Security*, pp. 362-374. Springer, Cham, 2020. [PDF][Link]

[6] Jiang, Jingzhou, Xiaojun Xiong, **Yikun Ou**, and Hong Wang* *(Advisor)*. "An Improved Bacterial Foraging Optimization with Differential and Poisson Distribution Strategy and its Application to Nurse Scheduling Problem." In *International Conference on Swarm Intelligence*, pp. 312-324. Springer, Cham, 2020. [PDF][Link]

Chinese Journal Publication

[1] Hong Wang *(Advisor)*, Yikun Ou, and Niu Ben. "Discussion on Teaching Methods Combining Theory and Practice—taking Cybersecurity and E-commerce Courses as An Example." *The Management World We Explore*, Collection of Teaching Research in School of Management, Shenzhen University, 2019.

RESEARCH EXPERIENCE

➢ **Main research** | *Advisor: Prof. Hong Wang* **Oct. 2019 – Jun.2022**

Topic: A Semi-supervised Bacterial Heuristic Feature Selection Algorithm for High-Dimensional Classification with Missing Labels.

Main contributions:

- A new self-adjusted semi-supervised feature selection approach is proposed to solve the classification problems with missing labels and high-dimensional redundant features using a two-step self-training mechanism and an improved bacterial heuristic method.
- The strategies of hierarchical population initialization, dynamic learning, and elite population evolution are proposed to enhance the capacity of the bacterial heuristic algorithm in searching for various feature combinations.
- The proposed semi-supervised bacterial heuristic feature selection algorithm is studied to be superior in addressing label incomplete and high-dimensional classification tasks in comparison to several state-of-the-art semi-supervised FS algorithms.

Master Theis | *Advisor: Prof. Hong Wang* **Oct. 2021 – Jun.2022**

Topic: Bacterial Optimization Feature Selection for Imbalanced Customer Classification.

Main works:

- Used a synthetic minority oversampling technique to process the customer data to increase the method's learning effect.
- Proposed a new structure in optimal bacterial heuristic optimization with an alternation mechanism that controls the alternate operation of reproduction and dispersal-elimination activities, to improve the structure of the bacteria algorithm and reduce the computation cost and increase the searching diversity.
- Designed a dynamic learning strategy combined with a nondominated sort strategy for bacteria running to obtain a small elite feature subset and avoid being trapped in a local optimal.

Research Assistant **Dec. 2020 – May 2021**

➢ **The Monograph Compiling** | *Advisor: Prof. Hong Wang*

Title: Theory and practice of novel feature selection algorithms

- Participated in a monograph compilation advised by Prof. Hong Wang. This book focuses on the investigation of new feature selection techniques based on swarm intelligence. I contributed to the writing of the development process of feature selection and the description of our team's proposed new feature selection methods.

Research Assistant **Sept. 2019 – Apr. 2020**

➢ **National Natural Science Foundation of China** | *Adviser: Prof. Ben Niu*

- Participated in writing for the National Natural Science Foundation of China which is led by Prof. Ben Niu. It is mainly about the Dissipative Bacterial Colony Optimization and the Multi-objective Dissipative Bacterial Colony Optimization methods proposed by the team. I was mostly involved in writing some of the algorithm introductions.

CAMPUS EXPERIENCE

Core Member **Sept. 2019 – Apr. 2020**

➢ **The innovation and entrepreneurship competition** | *Advisor: Prof. Ben Niu & Prof. Hong Wang*

Product: SWARM Intelligent medical auxiliary diagnosis assistant.

This is an innovation and entrepreneurship project which is based on swarm intelligence. We applied the technologies of bacterial optimization algorithm, image processing, and text analysis into a medical system that consists of auxiliary diagnosis, efficacy evaluation, and prognostic prediction.

- Collated project data and was responsible for the writing of the chapter on product information.

Adjunct Lecturer **Dec. 2020 – Jan. 2021**

➢ **Department: Adult undergraduate courses in E-commerce and modern logistics in SZU**

- Acted as an adjunct lecturer at Shenzhen University's College of Adult Education. The subject of instruction was E-commerce and modern logistics, and the course objectives included introducing the evolution of E-commerce, modern logistics, and the fundamentals of operational research.

HONORS AND AWARDS

1. Outstanding Graduate of Sichuan Province **2019**

➢ Granted to only 1% of graduates each year; the highest honor in Sichuan Province, China

2. Excellent All-Around Student **2016 &2017**

➢ Students who rank first in their major each semester

3. Outstanding freshman scholarship, Shenzhen University **2019**

➢ Granted to only 10 postgraduates in my department each year

4. First Prize for Excellent Postgraduates Scholarship **2020**

➢ Granted to the top 3% of postgraduates in my department each year