華中科技大學
Huazhong University of Science and Technology

Basic Information

Name ： Shuo REN Date of birth： October 31, 2001
Telephone: +86 17838315579
Wechat： ShuoRen17838315579 English proficiency: CET-6: 533, TOEFL 85
Email: shuoren@hust.edu.cn 1392082276@qq.com renshuo139@gmail.com

Education Background

Sept. 2020 - Present Huazhong University of Science and Technology
Bachelor of Computer Science and Technology
Overall Major Ranking: top 1.5%, GPA: 3.93
Selected Coursework:
Introduction to Artificial Intelligence: 95 Principles of Functional Programming: 98 Discrete Mathematics: 97 Comprehensive Design of Data Structures: 97 Introduction to Big Data: 98 Big Data Processing: 99 Machine Learning: 93

Some attempts:

1. A Local Dynamic Programming Algorithm for the Exact 0-1 Knapsack Problem Based on Greedy Backtracking (**first author**)

Presented at the 2022 China Theory of Computer Science Conference (**CCF NCTCS2022**), this paper proposes **a local dynamic programming algorithm (LDPGB) based on greedy and backtracking** techniques for the NP-hard exact 0-1 knapsack problem. The algorithm quickly finds an approximate optimal solution by employing the greedy and backtracking methods and then approaches the optimal solution by using the results of local dynamic programming, thus balancing the correctness and time complexity of the algorithm. Extensive experimental results show that, compared to classical dynamic programming algorithms, the proposed algorithm can accurately find the optimal solution of the problem in a shorter time in most cases, significantly improving the algorithm's efficiency.

2. Solution Space Exploring and Descent for **PESS** (**second author**), submitted to journal **Computers and Operations Research**

In this work, I mainly contributed to the design of the potential function and the overall experimental validation. Overall, we proposed an efficient heuristic algorithm called the "Solution Space Exploring and Descent" for the sphere packing problem. We also proposed an adaptive neighbor object maintenance method. Many new sphere packing records were discovered in the experiments (http://www.packomania.com/).

3. Small Projects

I completed the design and implementation of a psychological diary software (PsychoDiary) based on neural network analysis. I independently constructed a CDCL-SAT solver and participated in an EDA competition, where I converted the high bit-width logic equivalence verification problem into an SAT problem and used the open-source CaDiCaL tool to assist in solving the problem.

Awards and Honors

- **National Scholarship of China, 2020-2021**
- National Special Award, 2022 RoboCom Robot Developer Competition
- National Second Prize, 2022 Integrated Circuit EDA Design Elite Challenge
- National First Prize, 2022 China Software Open Source Innovation Contest
- "Excellent Student" title, 2020-2021 academic year

First Prize (M Award) in the 2022 American Mathematical Contest in Modeling; Provincial First Prize in the 2022 National College Students' Mathematical Contest in Modeling
Excellent Young Communist League Member, Self-improvement Scholarship, Academic Excellence Scholarship; Outstanding Individual for Summer Social Practice, Outstanding Member of the Group, Excellent Leader of the Library Volunteer Group
Excellent Award, 2021 China University Big Data Challenge, Third Prize, MatherCup University Mathematical Modeling Challenge.

Student Work

September 2020 - Present, Class **Monitor** and Deputy Branch Secretary of Class 202010, School of Computer Science, Huazhong University of Science and Technology(HUSTCS).
September 2020 - Present, Grade Assistant, Safety Officer, and Party Building Group Member of HUSTCS.
December 2021 - Present, Assistant at the Huazhong University of Science and Technology Student Aid Center.