

Yixin Liu

19927522401 | yixinliucs@gamil.com
www.csyixinliu.com | Shenzhen, China

EDUCATION

South China University of Technology

Aug 2018 - Aug 2022

Major in Software Engineering (Bachelor)

Guangzhou

GPA: 3.82/4.00 (88.61/100) **Ranking:** 4%(12/286) **English Ability:** CET-4: 598 CET-6: 533 TOEFL: 83

Related Courses: *Principles of Compiler* (98), *Probability And Statistics* (100), *Calculus* (97), *Linear Algebra* (94), *Operating System* (90), *Artificial Intelligence* (93), *Algorithm Design and Analysis* (91), *Data Mining* (91), *Software design*(91)

Scholarship: National Scholarship x2 (2021, 2020), SCUT Premium Scholarship (2019)

PUBLICATION

1. **Yixin Liu**, Yong Guo, Jiaxin Guo, Luoqian Jiang, Jian Chen. [Conditional Automated Channel Pruning for Deep Neural Networks](#). IEEE Signal Processing Letters(SPL). Jun 2021
2. **Yixin Liu**, Jiaxin Guo, Jieyang Dong, Luoqian Jiang, Haoyuan Ouyang. [Priority prediction of Asian Hornet sighting report using machine learning methods](#). 2021 IEEE International Conference on Software Engineering and Artificial Intelligence. Jun 2021

RESEARCH EXPERIENCE

Independent Research in SCUT

Jul 2020 - Apr 2021

- **Conditional Automated Channel Pruning for Deep Neural Networks** *Advisor: Prof. Jian Chen*
 - **Background:** *Channel pruning* is an important method in model compression. Under the condition of multiple compression rates, traditional methods have to repeat the searching process multiple times, which can be unnecessary and inefficient. To tackle this problem, we propose a novel method that simultaneously produces compressed models under different compression rates through a single channel pruning process.
 - **Work and Contribution:** ①Formalize the problem as a Markov decision process (MDP), and design the state space and action space. ②Purpose an RL-based framework to solve the MDP problem, and design a reward function based on *Reward Shaping*, which significantly speeds up the learning process. ③Purpose a *constraint-guaranteed* strategy to limit the action space, which guides the agent to produce compressed networks that meet the constraints. ④Under three specific compression rate on ResNet-50, our methods is 3x~800x faster than the three baseline methods.
 - **Results:** [Accepted by IEEE Signal Processing Letters \(SCI-JCR-Q2, CCF-C\)](#).
- **Priority Prediction of Sighting Report Using Machine Learning Methods** *Advisor: Prof. Han Huang*
 - **Background:** The Asian hornet, as an alien species, has brought great damage to the ecology of North America. The government usually mobilizes citizens to submit nest sighting reports, and then strike out targeted exterminations to achieve high-efficiency prevention and control. However, given that most of the report submitters lack knowledge of the species and there are many false positives in the report, identifying high-confidence reports from the masses of sighting reports is crucial. Based on the migration mechanism and report content, we propose a report priority prediction method.
 - **Work and Contribution:** ①Design the Asian hornet's propagation model on the migration habits and Gaussian distribution assumption. ②Predict the reliability of the report using Logistic Regression based on the well-designed features of sighting reports. ③Quantify the confirmations between reports to determine the priority; Achieve weighted accuracy of 83.5%.
 - **Results:** [Finalist Winner](#) (rank 2%) in 2021MCM, [paper accepted by SEAI 2021 \(EI Conference\)](#)

ENGINEERING EXPERIENCE

Research Intern in Tsinghua University(SZ)

Jun 2021 - Sep 2021

- Code Implementation of paper: *Circle Loss: A Unified Perspective of Pair Similarity Optimization(CVPR 2020)* using Tensorflow 1.15 and Mindspoc. Contribute to [Ascend-ModelZoo](#). *Advised by Prof. Chun Yuan*.

Independent Engineering Project in SCUT

Feb 2021

- Bert-based Legal Judgment Document Amount Entity Extraction Model

- **Description:** In actual legal business requirements, the extraction of the amount fields in the legal judgments document is usually done manually, which is time-consuming and labour-intensive. This project implements a BERT-based model for legal judgment amount entity extraction, enabling automatic extraction of ten types of amount entities.
- **Work:** ①Design "*TF-IDF+Naive Bayes*" classification scheme for the preliminary screening of judgment texts and thus improve processing efficiency. ②Initial screening of amount entities based on *Regular Expressions*; Constructing classification features based on context; Designing "*BERT+ Logistic Regression*" scheme to complete the final prediction; Archive weighted accuracy of *93.5%*. ③Package the algorithm as docker and deploy it on the server.
- **Results:** [A software copyright authorized](#). [A software](#) package was delivered to Southern Big Data Co., Ltd.
- **Covid-19 Prediction Model based on Huber Regression and Hierarchical Feature**
 - **Description:** In the COVID-19 prediction and evaluation competition at the 6th China Health Information Processing Conference, given the time series data and regional characteristic data of confirmed cases in three regions, we need to predict the confirmed cases for the next 7 days.
 - **Work:** ①Data cleaning for outliers; design a hierarchical classification feature coding scheme to encode the text information. ②Conduct sufficient experiments to comprehensively compare the performance of multiple models. ③Improve the model based on Huber Regression, which significantly reduces the sensitivity of model fitting to data outliers.
 - **Results:** [The championship of this track](#); [Gave an oral presentation](#).

COMPETITION EXPERIENCE

Provincial Second Prize - National Mathematics Competition for College Students	2020-10
Provincial First Prize - Contemporary Undergraduate Mathematical Contest in Modeling	2020-10
Runner-up - National Undergraduate Software Practice and Innovation Ability Competition in 2020	2020-11
Champion - The 6th China Health Information Processing Conference (Evaluation 4)	2020-11
Finalist Winner (2%) - 2021 American Mathematical Contest in Modeling	2021-04

Academic Services

KDD 2022 Reviewer

Apr 2022