

ZIXIN RAO

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Education

Central University of Nationalities

Bachelor of Information and Computing Science

Average score: 85.9/100

Main Course: Elements of Information Theory (96), Mathematical Modeling (90), Data Structure (92), Mathematical Analysis (94), Probability and Mathematical Statistics (86), Python Language (88)

Sept. 2021 – Jun. 2025(Expected)

Beijing, China

Publications

Human-Computer Interactions with Natural Language Processing and Future Trends of HCI

[J].China Science and Technology Information, 2023

first author

Study of Named Entity Recognition Based on Flat-Lattice Transformer and Fast Gradient Method

(to be submitted)

first author

Improving entity recognition accuracy in the Non-Flat-Lattice Transformer model by introducing word-level position tagging as input to develop a BCEloss classification model for predicting the accuracy of benchmark datasets

Research Experience

Enhancing RoBERTa with Global Pointer and Adversarial Training for Robust Text Classification

Sept. 2023 – present

Beijing, China

- Integrate global pointer and adversarial training strategies into the RoBERTa model to enhance its performance and resilience in complex text classification tasks
- Evaluate the performance differences between the enhanced and original models using standard metrics, focusing on the models' resistance to adversarial disturbances
- Analyze the experimental results in depth, explore how the technologies improve text classification

Study of Accuracy of FLAT Model's Word-level Position Tagging Based on BCEloss Classification

May. 2023 – Dec. 2023

Beijing, China

- Devising an experimental strategy to develop a BCEloss classification model for predicting the accuracy of word-level position tagging
- Conducting experiments on NLP benchmark datasets to compare the optimized NFLAT model with existing models in terms of performance metrics

Studying Autism Behavior in the Media through Hierarchical Topic Modeling

Nov. 2022 – Jul.2023

Beijing, China

- Collect and filter media articles related to autism, including news reports, blogs, and forum posts
- Analyze the high-frequency words and representative documents under each theme to understand the descriptions and frameworks of autism behavior in the media
- Adopting actor-critic algorithms in deep learning for results

Scientific Competitions

Second Prize, National Mathematical Contest in Modeling

January 2023

- Group leader, responsible for code implementation and modeling ideas
- Complete the paper *Empirical Verification of Modernization Index System on Long Short-Term Memory*

Third Prize, The Chinese Mathematics Competition, 2022

August 2022

- Group leader, responsible for problem-solving ideas and MATLAB modeling
- Complete the report *Study on the Coupling Coordination of Digital Economy and Ecological Civilization Modernization*

Work Experience

Tianjin Dongrui Software Corporation

May 2023 – August 2023

Algorithm Intern

Tianjin, China

- Conducted data preprocessing tasks like data cleaning and feature engineering, to prepare for algorithm development
- Implemented various machine learning algorithms on benchmark datasets for algorithm optimization
- Provided feedback to improve code quality, readability, and maintainability of algorithm implementations

Honors & Awards

Member of External Affairs, Student Union

Spring 2021 – 2023

Central University of Nationalities

- * Professional Second Class Scholarship, Central University of Nationalities, 2023
- * Professional First Class Scholarship, Central University of Nationalities, 2022
- * Second Prize of the National College Student Mathematics Competition, Mathematics Major, Beijing, 2022

Skills

- * Language: English(fluent, TOEFL 100), Chinese(native)
- * Programming: Python, R, LaTeX, Matlab, C/C++