Xinyue Zheng

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Country of Origin: China
Country of Residence: US

RESEARCH INTERESTS

Machine learning for network, Data analysis, Network Security

EDUCATION

University of Connecticut   Storrs, CT
Ph.D. student in Schoole of Computing   *Current GPA: 4.0/4.0*
Advisor: Minmei Wang

Nanyang Technology University   August 2021-January 2023
M.S. in Signal Processing   *Singapore*
Overall GPA: 4/5   Supervisor: Lihui Chen.

University of Electronic Science and Technology of China   September 2017-June 2021
B.E. in Electronic Information Engineering   *Chengdu, China*
Overall GPA: 3.8/4

RESEARCH EXPERIENCE

Research Assistant (An advanced Data-Sharing system for Vehicle Network) August 2023-current
School of Computing, UConn
- Developed a data-sharing system with RSUs and OBUs for autonomous vehicles.
- Improved bandwidth efficiency and transmission speed.
- Enabled obstacle detection for safer driving.
- Applied data encryption to protect anomaly attacks.

Research Assistant (Patents matching based on features)   August 2022-June 2023
School of Electrical and Electronic Engineering, NTU
- Extracting entities from the texst by using the multipartite rank model.
- Using wikidata and graphs to expand features and TF-IDF to transform entities into vectors.
- Using the cosine similarity algorithm to match the object with the dataset.
- Understanding, selecting and deploying Language Models and Knowledge Graph.
- Current work focuses on dimension reduction for the embeddings of the paragraph of patents.

Trainee   May-October 2019
The Mathematical Modelling Training Camp of UESTC
- Learned to involve mathematics to solve real-world problems and solve the problems with different algorithms such as monte carlo method, graph theory algorithm, dynamic programming, simulated annealing, neural network and genetic algorithm,etc.
- Won the First Prize in Contemporary Undergraduate Mathematical Contest in Modeling of Sichuan Province.

Research Results

Knowledge Acquisition over Text Data September 2021-July 2022
Master's thesis
- This project is designed to develop a website application to automatically generate question-answer pairs.
- Model Selection: I chose Name Entity Recognition and Multipartite Rank Model as the automatic keyword extraction algorithm through the literature review and the result of a survey.
- After comparing some models like Transformer, BERT, and T5, I use the T5 model to extract Simple QA Pairs from given keywords and text.
- The program is packed up into a website application to recognize text and generate question-answer pairs.

The Detection Methods of Pulse Signals Based on STFT and Neural Network 2020-May 2021
Bachelor's thesis
- This paper aims to distinguish four kinds of pulse radar signals by STFT and deep learning.
- I reviewed the literature about the generation mechanism of Radar Signal pulse and identified the difficulties of distinguishing them.
- Short-time Fourier Transform (STFT) and MATLAB programming were used to generate pulse radar signals and export the images, and a CNN model was identified to extract the characteristic parameters of the four radar signals accurately.

Awards & Honors

First Prize in Contemporary Undergraduate Mathematical Contest in Modeling of Sichuan Province, 2019
Second Award of Excellence Scholarship of UESTC, 2018
Second Award of Excellence Scholarship of UESTC, 2017

Skills

- Proficient in statistics software and programming language, including Python, C, and Matlab.
- Familiar with deep learning programming frameworks: NLTK, SpaCy, TensorFlow, and Pytorch.
- Highly advanced knowledge of machine learning and signal processing.
- Good English language skills (IElTS 7).