Yuxiao Wang
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Education

Xi'an University of Posts & Telecommunications, Shaanxi, China 09/2018-06/2022
Major: Computer Science and Technology **Class Ranking:** 12/264, TOP 4%
Academic Honors: Third Class Scholarship, Second Class Scholarship, First Class Scholarship

Washington University in St. Louis, MO, USA 09/2022-Present
Major: Data Analytics & Statistics

Research Experience

Drug Redirection Based on Knowledge Graph and Graph Neural Network (GNN) 05/2021-02/2022
• Used the deep learning framework DGL, which made the codes run more efficiently and adopted the basic model of Geom-GCN
• Selected the data from DrugBANK and adopted the TransE_L2 node embedding method with the purpose of verifying the use of knowledge graph embedding technology to generate meaningful entity and relationship embedding, that is, edge prediction
• Divided the edge triples into three parts in the proportions of 90%, 5% and 5% as the training, verification, and test set, concluded that embedding method of TransE can better predict the potential relationship between drugs and diseases

FPGA Model Machine 06/2021-06/2021
• Designed the instruction system based on MIPS, which included the basic architecture of the model machine, data path, arithmetic unit, instruction memory, data memory, general register, input / output port and other hardware components

The Visualization Information System of Internet Highway Construction and Management, A Provincial Project 01/2020-06/2020
• Conducted research on the semantic segmentation of roadside UAV images
• Did standard classification of ground features of UAV images on both sides of the road design route
• Participated in the manual feature classification dataset annotation of the images of the whole line as well as the training and classification of deep learning network
• Selected the evaluation method and improved the structure of the network layer, and finally achieved good classification results

Campus Navigation System 12/2019-01/2020
• Designed this system for the users to query the locations of the campus and for the administrators to add, delete, check and modify the traffic map as well as logging in and modifying the password in the interactive pages
• Designed a user-friendly interactive interface, used Qt to write a GUI graphical interface so as to attach photos to the nodes of each campus building, my application of Dijkstra algorithm made it more efficient and time-consuming to find the shortest path, which would enable users to feel convenient when using the system

Competition Experience

Chinese College Students Program Algorithm Design Ladder Competition 04/2020-11/2020
• Worked in a group of ten students to complete the algorithm design questions within the specified time, which included simulation questions, quick sort, binary tree, the use of stack data structure output in suffix expression, etc.
• Won the **provincial level second prize** in this competition

The Design of Obstacle Avoidance System, A School-level Science and Technology Project 05/2020-11/2020
• Extracted a part of technology from the 5G intelligent orchard robot to conduct this school-level science and technology project
• Worked in a group of seven people including our instructor, took charge of temperature control module of obstacle avoidance system
• Learned that pyroelectric detector detects the changing temperature, and after photoelectric conversion, it becomes an AC voltage signal for signal processing circuit
• This project was selected as **a class B project in the school**

China College Students' "Internet+" Innovation and Entrepreneurship Competition 03/2020-08/2020
• Took charge of technical conception and planning; Wrote technical copies and put forward feasible and innovative ideas
• Combined 5G and Internet of things technology, we connected agricultural robots with the Internet to realize remote monitoring, automatic alarm, control, diagnosis and maintenance, and then realized the new intelligent agricultural Internet of things operation by integrating "management, control and operation"
• Won the **third prize at the school level**

Intern Experience

Intern, Institute of Computing Technology, Chinese Academy of Sciences (ICT) 07/2021-02/2022
• Conducted research on quotation extraction and quotation attribution of Natural Language Processing (NLP) with the use of Python
• Wrote an evaluation model independently to evaluate the performance of neural network model
• Used Support Vector Machine (SVM) and Clustering to realize a baseline model; Combined SVM and GloVe Word Vectors to predict word labels; Built a neural network model through the simplest linear layer and softmax layer combined with GloVe Word Vectors to directly predict the word labels
• Proposed a DSC model that is composed of attention-based transformer autoencoder which can obtain vector representation containing global information through auto-encoding and auto-decoding and a classifier which is composed of hierarchical BERT layers
• Proposed an effective model which combines the state-of-the-art method in document-level sentiment analysis task and Wide&Deep and NCF, the most typical methods in recommendation system area, and the document representation that gained by the recommendation system component which can really guide the classifier's prediction

Extracurricular Experience

Volunteer, Neighborhood Community Epidemic Prevention and Control, Shanxi, China 02/2020
• Delivered vegetables, eggs, milk and other food to my neighbors, and helped everyone get express delivery

Volunteer, Shanxi Science and Technology Museum, Shanxi, China 07/2019
• Explained and popularized knowledge in the four parts of history of mathematics, mathematicians, mathematics and human activities, and participation and interaction exhibition reflecting mathematical ideas and mathematical methods to the visitors of the mathematics exhibition hall

Skills & Languages & Interests

Skills: Programming (Python, C++, C, MATLAB); Software (Premiere, Photoshop, PyCharm, Proteus, ModelSim, Vivado)
Languages: English (proficient), Chinese (native speaker), Korean(beginner)
Interests: violin, badminton