

Haoqin Tu

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AREA OF INTERESTS

Optimization, Machine Learning, Natural Language Processing, Image Processing, Deep Learning

EDUCATION

Math and Physics Synthesis Class (50 students selected every year)

Fuzhou Fujian

MAJOR IN INFORMATION AND COMPUTING SCIENCE

Sep. 2017 - Present

- Senior GPA: 3.50/4.0, Rank: 2/17 in Information and Computing Science branch
- Got the first class comprehensive scholarship for one semester
- Got the second class comprehensive scholarship for three semesters

SKILLS

Programming Python, C/C++, LaTeX, SQL

Front-end HTML

Languages Mandarin, English

RESEARCH EXPERIENCE

Text Stega via Conditional Text Generation Guided by Knowledge Graph

Beijing

TSINGHUA UNIVERSITY||ADVISED BY PROF. YONGFENG HUANG (PROFESSOR OF ELECTRICAL AND ENGINEERING DEPARTMENT)

Jun. 2020 - Present

- Text steganography is not a tough task nowadays, but how to generate semantically / emotionally controllable long text to hide information is an unsolved problem.
- Took part in designing a model using VAE frame in both word planning stage and word-level generation stage to make sure it can produce coherent and fluent sentences guided by given tuples
- Made a dataset based on a car information knowledge graph and trained the model on it
- Implemented code of multiple generation process to improve the extraction rate of given tuple in sentences

Intelligent analysis of Law cases

Beijing

TSINGHUA UNIVERSITY||ADVISED BY PROF. YONGFENG HUANG (PROFESSOR OF ELECTRICAL AND ENGINEERING DEPARTMENT)

July. 2020 - Aug. 2020

- It's hard for public to tell what accusation should be sentenced to a criminal with only knowing what he/she has done. We designed two models to judge whether someone is guilty and what accusation should be given to him/her based on the statement of each case
- Built a large scale law suit case dataset with detailed accusation label in Chinese
- Designed algorithms to extract accusations from the given court sentences accurately

Analysis and Diagnosis of Osteocyte unit structure via ConvNet

Fuzhou Fujian

FUZHOU UNIVERSITY||ADVISED BY PROF. WENXI LIU (VICE PROFESSOR OF MATH& COMPUTER SCIENCE DEPARTMENT)

Sep. 2019 - Mar. 2020

- Based on the study of image segmentation neural network U-net, we hope to adjust the skip connection in its iconic U structure while maintaining its accuracy.
- Inspired by densenet, I took part in proposed a novel method: the dense block which is similar to the one in densenet is added into the U gap
- Labeled an osteocyte picture dataset using TINA and Amira software

Various methods of matrix completion and application

Fuzhou Fujian

FUZHOU UNIVERSITY||ADVISED BY PROF. SHIPING WANG (PROFESSOR OF MATH& COMPUTER SCIENCE DEPARTMENT)

Jul. 2019 - Feb. 2020

- Reimplementation of algorithms in the mature recommender system library Librec and observed their performance on the mainstream datasets
- Implemented algorithms of low-rank matrix recovery. They were realised mainly by constraining the Schatten-p norm of matrix

COMPETITION PROGRAM

2020 Mathorcup Math Modeling for College Student

Fuzhou Fujian

FUZHOU UNIVERSITY||ADVISED BY PROF. YANMEI HONG (VICE PROFESSOR OF MATH& COMPUTER SCIENCE DEPARTMENT)

Jul. 2020

- A novel solution is proposed linked to ant colony algorithm(ACO) to solve the shortest Hamiltonian path problem
- The ACO algorithm is used to solve the problem of optimal Hamiltonian circuit, then we carried out a 'ring splitting' action according to different situations of end point in the circuit to decide the final step.
- Won the second prize in this national math modeling competition

CAMPUS EXPERIENCE

Teaching Assitant in Engineering Physics

MAYNOOTH INTERNATIONAL ENGINEERING COLLAGE-FUZHOU UNIVERSITY

Fuzhou Fujian

Nov. 2019 - Aug. 2020

- Student teaching assitant in engineering physics at Robotics and Intelligent Devices department
- Regular homework correcting, guide students to review the knowledge after taking classes

ENGLISH PROFICIENCY

2018 **Minor in English**, GPA: 3.73/4.00, Rank: 1/10

2017 **College English Test 4**, 593

2018 **College English Test 6**, 562