Junchen Zhao

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I'm an undergraduate student tripe majoring in B.S. Data Science, B.S. Business Information Management, and B.S in Pure Mathematics at the University of California Irvine. I did the Master of Engineering Computing exchange study at Imperial College London during my academic year 2019-2020. I like to keep learning, challenging myself and working in a competitive environment.

Education Experience

2017-06 - present

University of California, Irvine (UCI)

B.S. Data Science
B.S. Business Information Management
B.S in Pure Mathematics

2019-09 - 2020-06

Imperial College London (MEng Computing Exchange specializing in Machine Learning and Artificial Intelligence)

One Academic year MEng exchange in the Computing department at Imperial College London, specializing in Machine Learning and Artificial Intelligence

2014-09 - 2017-06

The Gunston School(High School)

Publication

2018-10 [2019DATE] **Junchen Zhao***, Ian.G.Harris. Subtree Identification for generating assertions Language Descriptions. **Accepted by conference Design Automation and Test in Europe.**

2020-05 [2020ICSME] **Junchen Zhao***, Ian.G.Harris. Automatic Code Generation from Natural Language Descriptions Using Neural Machine Translation with BERT. **Submitted to conference The International Conference on Software Maintenance and Evolution.**

Selected Courses

Machine Learning: Deep Learning | Machine Learning for Medical Imaging | Introduction to Machine Learning | Mathematics for Machine Learning | Reinforcement Learning | Natural Language Processing.

Statistics: Application of Probability in Computer Science | Statistical Methods for Data Analysis | Introduction to Probability and Statistics | Probability and Stochastic Processes

Information and Data Management: Information Retrieval | Information Visualization | Introduction to Data Management

Algorithm: Design and Analysis of Algorithm

Graphics: Computer Vision

Research and Industrial Experience

2020-05 - present

Computational Neuroscience Part-time Researcher

University of College London, Max Planck Centre for Computational Psychiatry and Aging
Led by Dr Dominik Bach.
I worked as Part-time researcher in the Max Planck UCL Centre for Computational Psychiatry and Aging Research for programming and software development in a research project led by Dr Dominik Bach.
In this position, I'm mainly responsible for the tasks of re-analyzing an existing data set, and recording new data, in order to identify possible prediction error signals. I'm also responsible for recording the Pupillometry, ECG, and skin conductance data, and analyzing them with psychophysiological modeling techniques. Project Link follows: [LINK]

2020-07 - 2020-09

Computer Science Summer Research Internship

Imperial College London, Computing Department, NLP Group
Under supervision of Professor Lucia Specia.
Evaluating Visual Fidelity of Image Description Based on Fluency-based Word Mover's Distance
Worked with Professor Lucia Specia at Imperial College, we are proposing to build a generated image description evaluation system by applying Fluency-based word mover's distance, and update the previous work of the fluency- based word mover's distance from word2vec to contextualized word embedding, such as BERT, so as to improving the image description evaluation system accuracy result efficiently. Project Link follows: [LINK]

2019-09 - 2020-06

Computer Science Research Assistant

Imperial College London, Computing Department
Under Supervision of Professor Belardinelli, Francesco
Computer Science Master of Engineering thesis research project - Safety-Aware Multi- Agent Apprenticeship Learning:
Working with Professor Belardinelli, Francesco at Imperial College through one academic year 2019-2020 to extract safe reward functions from expert behaviors in multi-agent Apprenticeship Learning systems, which is a type of multiple-agent inverse reinforcement learning system that we learn from expert demonstration where reward function of the Markov Game is unknown to the learning agents. Project link follows: [LINK]

2019-05 - 2020-04

Computer Science Research Assistant

University of California, Irvine - Dept. of Information & Computer Science
Under supervision of Professor Ian G Harris.

Intelligent Chatbot system for translating Natural Language to Code:
Worked with a partner and professor Ian G Harris to write a chatbot system for translating the natural language instruction to python code by applying Supervised Learning, Unsupervised Learning and the OPEN-NMT with BERT developed by Harvard NLP. We have submitted our paper " **Automatic Code Generation from Natural Language Descriptions Using Neural Machine Translation with BERT** " to the conference ***International Conference on Software Maintenance and Evolution(conference ICSME).*** Our project description link is at Professor Harris's personal webpage " **Automatic Code Generation from Natural Language** ". [LINK]

2018-11 - 2019-03

Economic Research Assistant

University of California, Irvine - Dept. of Social Science
Under supervision of Professor Amihai Glazer and Dr. Binish Rijal.
Undergraduate Research focusing on social computing and Markets prediction:
Conducted research involving analyzing data with the firms which are affected by the change of government policies and used open-sourced data mining algorithm to generate the statistically significant pattern. Our project description is at Dr Binish Rijal's webpage "**The Impact of Party Politics on Environmental Monitoring and Enforcement**". [LINK]

2018-06 - 2018-09

Education Research Summer internship

University of California, Irvine - Digital Learning Lab
Under supervision of Professor Mark Warschauer.
Undergraduate Research focusing on computer education and Intelligent learning:
Conducted research based on students who take online Engineering course at UC Irvine, we used and analyzed the data collected from those students by supervised learning method so that we make decisions that whether the online courses needed to be improved and actually benefited the students who took this online course. Project link follows: [LINK].

2017-08 - 2018-06

Computer Science Research Assistant

University of California, Irvine - Dept. of Information & Computer Science
Under supervision of Professor Ian G. Harris.
Undergraduate Research focusing on analyzing structure of sentences:
Conducted research involving understanding the relationship between natural language and machine language. Using Stanford Core NLP to normalize dates, time, numeric quantities and markup the structure of sentences in terms of phrases and syntactic dependencies. Published Paper Subtree Identification for generating assertions Language Descriptions on DATE(Design Automation and Test in Europe). Paper links follows: [LINK].

2017-02 - 2017-05

Web Developer Internship

BookMooch
Developing Online book sharing and trading website:
We developed an online book sharing and trading website which was designed for those who need convenience of sharing and trading used books.
As a part of the team, I designed the format and Graphic User Interface of this website. Built website based on HTML/CSS.

Research Interests

1. Artificial Intelligence: Natural Language Processing (Computational Linguistics), Reinforcement Learning, Deep Learning.

2. Social computing: Technology and policy.

3. Computer education: Intelligence Learning system.

Skills

Computing Skills: Python, C++, Java, SQL, Numpy, Pandas, Pytorch, R, Matlab, Keras, Sklearn

Intermediate

Stochastic Analysis: Stochastic Analysis, Stochastic Process, Guassian Process, Bayesian Optimization.

Intermediate

Numerical Algorithms: Computational optimization, Markov Decision Process, Markov Game.

Intermediate

Leadership and Extracurricular Experience

2018-10 - present

University of California, Irvine

Chinese Students Leadership Society Board Member
1. I'm the board member of Chinese student leadership society(CSLS), which was founded in 2018.
2. My responsibility in CSLS is to organize the human resources in the club and holding meaningful events on campus.

2017-10 - 2018-02

University of California, Irvine

UCI New Venture Entrepreneurship Competition Team leader
Supervised by Professor Kevin Duane Bradford
1. Lead team to create online artist-job searching platform and successfully got into the final round competition at Paul Merage School of Business at UC Irvine.

2017-07 - 2017-08

University of California, Irvine

Summer Multicultural Leadership institute
1. Formulated a coalition to advocate for the Cross-Cultural Center against the stigma and social fears of interacting and seeking counseling in the campus.