

Shuyue Jia

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EDUCATION

City University of Hong Kong (CityU), Hong Kong, China May 2021 - Present

- Master of Philosophy Computer Science
- Supervisor: Dr. Shiqi Wang, Research area: Image Quality Assessment

Northeast Electric Power University (NEEPU), Jilin, China Sep 2016 - Jun 2020

- Bachelor of Engineering / Intelligence Science and Technology Major, GPA - 80.26/100
- Supervisor: Prof. Yimin Hou, Research area: Deep Learning
- Thesis: Brain-Computer Interface Signals' Classification and Its Applications based on Deep Learning Methods

University of California, Irvine (UC Irvine), CA, United States Jul - Sep 2017

- Summer School, Computer Science, GPA - 4.0/4.0
- Selected coursework: Computer Systems and Architecture (A+), University Writing and Communication (Pass)

EXPERIENCE

Tencent Technology Inc., Beijing, China **RS Research Intern** Oct - Dec 2020

- Assist with the unified architecture w.r.t. the *Rerank* Module for Tencent Video Recommendation System (RS).
- Conducted research on the Dynamic Graph Convolutional Neural Networks (DGCN) Survey and learned Reinforcement Learning models.

Philips Research, Shanghai, China **NLP Research Intern** Jul - Oct 2020

- Medical Concept Mapping: three levels \rightarrow BPE and FMM & BMM Algorithms for Sub-words (Syntax-level), Word Vector Cosine Similarity (Semantics-level), and Knowledge Graph (Pragmatics-level).
- Medical NER: compared the performances of different models \rightarrow CRF++, Character-level BiLSTM + CRF, Character-level BiLSTM + Word-level BiLSTM / CNNs + CRF, and deployed the models using Flask and Docker as web apps. Codes are available here, and the Docker Images are available on Docker Hub.
- Dynamic Webs Crawling: learned and crawled 620,000 words from NSTL using Python parallel package threading and other tricks to prevent Anti-reptile.

Tsinghua University, Beijing, China **NLP Summer Intern** Jun - Aug 2019

- Natural Language Processing (NLP) Intern at State Key Laboratory of Intelligent Technology and Systems, Tsinghua University, China.
- I was in a team that was responsible for building a salesman training system, which was a piece of insurance dialogue systems. During intern, I led the effort to create a Chinese Chat Title Named Entity Recognition (NER) via the BERT-BiLSTM-CRF model, and then matched the formal name with the recognized title through rules. NER Dataset: 30,676 samples, 96.73% accuracy on 550 samples.
- I also assisted in testing the sales training review system, and integrated salesman's dialogue according to different difficulty levels, in verifying the reliability of the system.

PUBLICATIONS

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- A Novel Approach of Decoding EEG Four-Class Motor Imagery Tasks via Scout ESI and CNN. [Paper] [Code]
Yimin Hou, Lu Zhou, **Shuyue Jia**, and Xiangmin Lun.
Journal of Neural Engineering, 2020; 17(1):016048.
 - Improving Performance: a Collaborative Strategy for the Multi-data Fusion of Electronic Nose and Hyperspectral to Track the Quality Difference of Rice. [Paper]
Yan Shi, Hangcheng Yuan, Chenao Xiong, **Shuyue Jia**, Jingjing Liu, and Hong Men.
Sensors & Actuators: B. Chemical, 2021; 129546.

- Origin Traceability of Rice based on an Electronic Nose Coupled with a Feature Reduction Strategy. [Paper]
Yan Shi, Xiaofei Jia, Hangcheng Yuan, **Shuyue Jia**, Jingjing Liu, and Hong Men.
Measurement Science and Technology, 2020; 32(2):025107.
- GCNs-Net: A Graph Convolutional Neural Network Approach for Decoding Time-resolved EEG Motor Imagery Signals. [Paper] [Spectral-GCN-Presentation] [Dynamic-GCN-Presentation] [Code]
Xiangmin Lun, **Shuyue Jia (Corresponding Author)**, Yimin Hou, Yan Shi, and Yang Li.
arXiv preprint arXiv:2006.08924, 2021. (Under Review)
- Deep Feature Mining via Attention-based BiLSTM-GCN for Human Motor Imagery Recognition. [Paper][Code]
Yimin Hou, **Shuyue Jia (Corresponding Author)**, Xiangmin Lun, Yan Shi, and Yang Li.
arXiv preprint arXiv:2005.00777, 2021. (Under Review)
- Attention-based Graph ResNet for Motor Intent Detection from Raw EEG signals. [Paper][Code]
Shuyue Jia (Corresponding Author), Yimin Hou, Yan Shi, and Yang Li.
arXiv preprint arXiv:2007.13484, 2021. (Rejected by MICCAI 2020)

SELECTED PROJECTS

- EEG-DL: A Deep Learning library for EEG Tasks (Signals) Classification** [Code] May 2020
- EEG-DL is a Deep Learning (DL) library written by TensorFlow for EEG Tasks (Signals) Classification. (*Undergraduate graduation project*)
 - Implemented 20+ popular algorithms including DNN, CNN, RNN-based, GCN with hands-on tutorials.
 - Finished writing *three papers* based on this project as shown in my *Publications*.
 - Comprehensive codes for EEG signals processing and classification *research*, and got 100+ GitHub stars.
- Shipwreck Sonar Image Segmentation based on Entropy Method** [Code] Jun - Sep 2018
- Pre-processed sonar images to enhance the contrast between the hull and reverberation area, which consists of discrete cosine filtering (DCT)→edge detection (Roberts Operator)→threshold segmentation via a one-dimensional histogram to locate the ship→morphological expansion by tapered concentric rings through Matlab.
 - The proposed method improved segmentation accuracy (86%+) compared with that without the pre-processed stage (no more than 80%) on dozens of sonar images.
- Third China Data Mining Competition, Butterfly Recognition** [Website] [Code] Oct 2017 - May 2018
- Successfully implemented YOLO-V2 and Faster-RCNN object detection algorithms under Windows & Ubuntu OS using the official butterfly dataset.
 - Used affine transformation, noise addition, contrast enhancement, rotation, symmetry changing, and other methods to extend the dataset.
 - YOLO-V2 Results (Team A106): 71.42% Averaged IoU, and unsatisfactory classification accuracy.

AWARDS

2019 Interdisciplinary Contest In Modeling (United States)	Honorable Mention	Apr 2019
2018 Mathematical Contest In Modeling (Jilin, China)	First Prize	Aug 2018
2018 Interdisciplinary Contest In Modeling (United States)	Successful Participant	Apr 2018
2018 NEEPU Outstanding Student Leader		Oct 2018
Innovation Scholarship of NEEPU	Winner	2018/2019
Academic Excellence Scholarship of NEEPU	Third Prize	2017/2018/2019/2020
Jilin City International Marathon, Half Marathon, Placed 148 / 5000		Jun 2017
Student Member of IEEE, ACM, and CCF		2019/2020/2021
2015 National High School Math League	Second Prize	Sep 2015
The 32 nd Chinese Physics Olympiad	Third Prize	Oct 2015

PROFESSIONAL SKILLS

Languages: Proficient in Python and Matlab; Familiar with C/Embedded C, R, and JavaScript
Libraries: TensorFlow (Preferred), PyTorch
Other frequently-used tools: Git, Vim, Markdown, Shell, L^AT_EX, Docker, K8s
English Language: Fluent in English, CET-6 581, CET-4 577, Duolingo 110