Shuyue Jia

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Education

City University of Hong Kong, China — May 2021 - Present

- M.Phil., Computer Science Major
- Research area: Image Quality Assessment

Northeast Electric Power University, China — Sep 2016 - Jun 2020

- B.Eng., Intelligence Science and Technology Major, GPA: 80.26/100
- Supervisor: Prof. Yimin Hou, Research area: EEG Signals Classification based on Deep Learning Methods

University of California, Irvine, CA, USA — 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

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

- Medical Concept Mapping: three levels → 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 → 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.

Research

- Deep Feature Mining via Attention-based BiLSTM-GCN for Human Motor Imagery Recognition. [Paper][Code]
  Yimin Hou, **Shuyue Jia**, Xiangmin Lun, Shu Zhang, Tao Chen, Fang Wang, Jinglei Lv.
  Frontiers in Neuroscience, 2021. (Accepted)
- 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.
- GCNs-Net: A Graph Convolutional Neural Network Approach for Decoding Time-resolved EEG Motor Imagery Signals. [Paper] [Spectral-GCN-Presentation] [Dynamic-GCN-Presentation] [Code]
  Yimin Hou, **Shuyue Jia**, Xiangmin Lun, Shu Zhang, Tao Chen, Fang Wang, Jinglei Lv.
  arXiv preprint arXiv:2006.08924, 2021.

Selected Projects

Shipwreck Sonar Image Segmentation based on Entropy Method [Code] — Jun - Sep 2018

- Pre-processed sonar images to enhance the contract 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.

Awards

2019 Interdisciplinary Contest In Modeling ***Honorable Mention*** — Apr 2019
2018 Mathematical Contest In Modeling (Jilin, China) ***First Prize*** — Aug 2018
2015 National High School Math League (Shanxi, China) ***Second Prize*** — Sep 2015

Professional Skills

Languages: Python (TensorFlow, PyTorch), C++
Other frequently-used tools: LaTeX, Git, Docker, K8s
English Language: CET-6 581, Fluent in English