# 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

- 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.

- 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.
  *arXiv preprint arXiv:2005.00777*, 2021. (Under Review)

- 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

**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.
- 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 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

2021 Standard Chartered Hong Kong Marathon, Half Marathon ***placed 318 / 6000 (01:38:14)*** Oct 2021
2019 Interdisciplinary Contest In Modeling ***Honorable Mention*** Apr 2019
2018 Mathematical Contest In Modeling (Jilin, China) ***First Prize*** Aug 2018
2017 Jilin City International Marathon, Half Marathon ***placed 148 / 4000 (01:47:36)*** Jun 2017
2015 National High School Math League (Shanxi, China) ***Second Prize*** Sep 2015

## Professional Skills

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