

# Shuyue Jia

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## EDUCATION

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City University of Hong Kong, Hong Kong S.A.R. May 2021 - Present

- M.Phil. in Computer Science, Dept. of Computer Science, GPA: 3.50/4.0
- Supervisor: Prof. Shiqi Wang
- **Expertise:** Image Quality Assessment and Perceptual Optimization
- Selected coursework: Big Data Algorithms and Techniques (A), Machine Learning Algorithms and Applications (B)
- Funded by a Research Assistant (RA) position supported by my supervisor Prof. Shiqi Wang

Northeast Electric Power University, Jilin, China Sept 2016 - Jun 2020

- B.Eng., Intelligence Science and Technology, School of Automation Engineering, GPA: 80.26/100 (Rank: Top 25%)
- Supervisor: Prof. Yimin Hou, Prof. Jinglei Lv, and Prof. Yang Li
- **Expertise:** Neural Networks (Deep Learning)
- Creator and Maintainer of GitHub repo **EEG-DL** (obtained 550+ stars and 170+ forks), a Deep Learning library written by TensorFlow for EEG Tasks (Signals) Classification

University of California, Irvine, CA, USA Jul - Sept 2017

- Visiting Student, Summer School, Dept. of Computer Science, GPA: 4.0/4.0
- Selected coursework: Computer Systems and Architecture (A+), University Writing and Communication (PASS)

## PUBLICATION

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2022:

- No-reference Image Quality Assessment via Non-local Dependency Modeling. [Paper] [Code] [Slides] [Poster]  
**Shuyue Jia**, Baoliang Chen, Dingquan Li, Shiqi Wang \*  
*IEEE 24<sup>th</sup> International Workshop on Multimedia Signal Processing (IEEE MMSP'22)* (Poster Presentation).
- GCNs-Net: A Graph Convolutional Neural Network Approach for Decoding Time-resolved EEG Motor Imagery Signals. [Paper] [Code] [Slides] [Survey]  
**Shuyue Jia**, Yimin Hou, Xiangmin Lun, Ziqian Hao, Yan Shi, Yang Li, Rui Zeng, Jinglei Lv \*  
*IEEE Transactions on Neural Networks and Learning Systems (IEEE T-NNLS)* (IF: 14.255, Citation: 44).

2021:

- 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 Bioengineering and Biotechnology* (IF: 6.064, Citation: 20).
- 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, Hong Men \*  
*Sensors & Actuators: B. Chemical* (IF: 9.221, Citation: 21).

2020:

- A Novel Approach of Decoding EEG Four-Class Motor Imagery Tasks via Scout ESI and CNN. [Paper] [Code]  
Yimin Hou, Lu Zhou \*, **Shuyue Jia**, Xiangmin Lun  
*Journal of Neural Engineering* (IF: 5.043, Citation: 68).  
GitHub Repo obtained 110+ stars and 40+ forks.

Note:

1. The number of citations is from my 🏆 Google Scholar.
2. \* denotes the Corresponding Author.

## RESEARCH EXPERIENCE

City University of Hong Kong, HK	Research Assistant	Sept 2021 - Present
<ul style="list-style-type: none"><li>Project: working on the Image Quality Assessment (IQA).</li><li>Model Compression &amp; Lightweight: investigated the topic of deep learning model compression and its deployment on mobile devices.</li></ul>		
Samsung Research, Beijing	Computer Vision Research Intern	May - Jun 2022
<ul style="list-style-type: none"><li>Research Proposal: Temporally Consistent Instance Tracking for Video Panoptic Segmentation (VPS).</li><li>Temporally consistent Instance Association: object high-level correspondence (instance embedding association) in consistency with the pixel low-level correspondence (optical flow).</li><li>Generate Dense Mask: wrote scripts to generate dense masks by linear interpolation from the sparse masks. (Mentor: Dr. Hui Zhang)</li></ul>		
Philips Research, Shanghai	NLP Research Intern	Jul - Oct 2020
<ul style="list-style-type: none"><li>Medical Concept Mapping: three levels to map the query to a standard term <math>\rightarrow</math> BPE and FMM &amp; BMM algorithms for sub-words generation and matching (syntax-level), word vector cosine similarity (semantics-level), and knowledge graph (pragmatics-level).</li><li>Medical Terms NER: compared the performances of different models <math>\rightarrow</math> 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 the Docker Hub.</li><li>Dynamic Webs Crawling: crawled 620,000 words from the NSTL via python parallel package threading and other tricks to prevent anti-reptile. (Mentor: Dr. Shuang Zhou)</li></ul>		
Tsinghua University, Beijing	NLP Summer Research Intern	Jun - Aug 2019
<ul style="list-style-type: none"><li>Natural Language Processing (NLP) intern at the State Key Laboratory of Intelligent Technology and Systems, Tsinghua University. (Prof. Xiaoyan Zhu group)</li><li>Chinese Chat Title Named Entity Recognition (NER): create a Chinese chat title 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.</li><li>System Testing: 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.</li></ul>		

## AWARDS AND SERVICES

### MATHEMATICS AND PHYSICS COMPETITIONS

2019 Interdisciplinary Contest In Modeling <i>Honorable Mention</i>	[Thesis] Apr 2019
2018 Mathematical Contest In Modeling, Jilin, China <i>First Prize</i>	[Thesis] Aug 2018
Innovation Scholarship, Northeast Electric Power University, China	2018, 2019
Excellent Student Scholarship, Northeast Electric Power University, China	2016 - 2020
The 32 <sup>nd</sup> Chinese Physics Olympiad (CPhO), China <i>Third Prize</i>	Oct 2015
2015 National High School Math League, China <i>Second Prize</i>	Sept 2015

### ACADEMIC SERVICES

**Reviewer** of AAAI, IEEE T-NNLS, IEEE T-IP, IEEE T-MM, and ACM TOMM on Image Quality Assessment and Enhancement, and IEEE Journal of Biomedical and Health Informatics on EEG Signal Processing

**Student Member** of IEEE and ACM since 2019, CCF (China Computer Federation) since 2017, and AAAI since 2022

### SPORTS COMPETITIONS

2021 Standard Chartered Hong Kong Marathon, Half Marathon, Placed <i>318 / 6000</i> (01:38:14)	Oct 2021
2017 National Marathon Championships (Jilin City Station), Half Marathon, Placed <i>148 / 5000</i> (01:47:36)	Jun 2017
Elite Athlete, The 45 <sup>th</sup> NEEPU Games	May 2017
3000-meter Steeplechase, The 45 <sup>th</sup> NEEPU Games, <i>The 7<sup>th</sup> Place in college</i>	May 2017

## PROFESSIONAL SKILLS

**Languages:** Python, C, Embedded C, C++, MATLAB, R, Mathematica, HTML

**Libraries:** TensorFlow, PyTorch, Scikit-learn

**Other frequently used tools:** Git, SVN, Unix basics/shell (Zsh/Bash), Vim, Markdown, L<sup>A</sup>T<sub>E</sub>X, Docker, K8s

**Hardware:** NVIDIA Jetson Nano (Ubuntu), Raspberry Pi (Raspbian OS), 80C52 Microcontroller (Embedded C)

**Hobbies:** Photography, Hiking, Mountain Climbing, Soccer, Cycling, Coding, Research, Marathon, Jogging