Shuyue Jia

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Education

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
- **Thesis**: No-reference Image Quality Assessment via Non-local Modeling

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)
- **Thesis**: Brain-computer Interface Signals Classification and Its Applications based on Deep Learning Methods
- Creator and Maintainer of GitHub repo **EEG-DL** (obtained 560+ 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

2022:

- No-reference Image Quality Assessment via Non-local Dependency Modeling [Paper] [Codes] [Slides] [Poster]
  Shuyue Jia, Baoliang Chen, Dingquan Li, Shiqi Wang *
  IEEE 24th 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] [Codes] [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
  Yimin Hou, **Shuyue Jia ***, Xiangmin Lun, Shu Zhang, Tao Chen, Fang Wang, Jinglei Lv [Paper] [Codes] [Slides]
  Frontiers in Bioengineering and Biotechnology (IF: 6.064, Citation: 21)

- Improving Performance: a Collaborative Strategy for the Multi-data Fusion of Electronic Nose and Hyperspectral to Track the Quality Difference of Rice [**E** 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] [Codes]
  Yimin Hou, Lu Zhou *, **Shuyue Jia**, Xiangmin Lun
  Journal of Neural Engineering (IF: 5.043, Citation: 69)
  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, Hong Kong **Research Assistant** Sept 2021 - Present

- Project: working on Image Quality Assessment (IQA).
- Model Compression and Lightweight: researched the topic of deep learning model compression and its deployment on mobile devices.

Samsung Research, Beijing **Computer Vision Research Intern** May - Jun 2022

- Research Proposal: Temporally Consistent Instance Tracking for Video Panoptic Segmentation (VPS).
- Temporally consistent Instance Association: object high-level correspondence (instance embedding association) in consistency with the pixel low-level correspondence (optical flow).
- Generate Dense Mask: wrote scripts to generate dense masks by linear interpolation from the sparse masks. (Mentor: Dr. Hui Zhang)

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

- Medical Concept Mapping: three levels to map the query to a standard term → BPE and FMM & BMM algorithms for sub-words generation and matching (syntax-level), word vector cosine similarity (semantics-level), and knowledge graph (pragmatics-level).
- Medical Terms 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 the Docker Hub.
- 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)

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

- 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.
- 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.

Awards and Services

Mathematics and Physics Competitions

2019 Interdisciplinary Contest In Modeling ***Honorable Mention*** [Thesis (English)] Apr 2019
2018 Mathematical Contest In Modeling, Jilin, China ***First Prize*** [Thesis (Chinese)] Aug 2018
Innovation Scholarship, Northeast Electric Power University, China 2018, 2019
Excellent Student Scholarship, Northeast Electric Power University, China 2016 - 2020
The 32^{nd} Chinese Physics Olympiad (CPhO), China ***Third Prize*** Oct 2015
2015 National High School Math League, China ***Second Prize*** 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, Rank *318 / 6000* (01:38:14) Oct 2021
2017 National Marathon Championships (Jilin City Station), Half Marathon, Rank *148 / 5000* (01:47:36) Jun 2017
Elite Athlete, The 45^{th} NEEPU Games May 2017
3000-meter Steeplechase, The 45^{th} NEEPU Games, ***The*** 7^{th} ***Place in college*** 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, LaTeX, Docker, K8s
Hardware: Nvidia Jetson Nano (Ubuntu), Raspberry Pi (Raspbian OS), 80C52 Microcontroller (Embedded C)
Hobbies: Photography, Hiking, Mountain Climbing, Soccer, Skateboarding, Cycling, Coding, Marathon