Jin LI

EDUCATION

- **BUT Speech@FIT, Brno University of Technology, Czech Republic, Visiting Scholar, 2024-present**
- **The Hong Kong Polytechnic University, Hong Kong, PhD, 2022-2025**
  - QS World University Rankings 2025: 57th
- **Ruprecht-Karls-Universität Heidelberg, Germany, MSc in Mathematics** *2015-2019*
  - THE World University Rankings 2025: 47th QS 2022: No.2 in Germany
- **Ocean University of China, Qingdao College, China, B.Eng. in Computer Science** *2010-2014*
  - 3.8/4.0 GPA Ranking 1 of 68 students in all classes

WORKING EXPERIENCE

- **Researcher, The Hong Kong Polytechnic University, Hong Kong**

Mar. 2022-Sep. 2022

- Research on machine learning related field such as speech processing, computer vision
- Voice cloning, automatic speech recognition (ASR), speaker recognition, text-to-speech (TTS), voice cloning algorithm research

- **Chinese Academy of Science, SIAT, Shenzhen** *May. 2019-Mar.2022*

- Research on automatic speech recognition, speech emotion recognition, speaker recognition, voice biometrics, and music generation
- Research on computer vision tasks such as video action detection and

classification

- **AI Lab, Ruprecht-Karls-Universität Heidelberg, Germany**

Feb. 2017-Mar.2019

- Research on applied mathematics such as linear optimization, non-linear optimization
- Implement machine learning algorithm and make application on computer vision such as object tracking

PUBLICATIONS

- **Jin Li**, Man-Wai Mak, Kong-Aik Lee, Junyi Peng, Johan Rohdin, Oldřich Plchot, Hynek Hermansky. Bayesian Learning Networks for Domain-Invariant Speaker Verification and Anti-Spoofing

  Submitted to *Interspeech 2025*
- **Jin Li**, Man-Wai Mak, Kong-Aik Lee, Johan Rohdin, Hynek Hermansky. Bayesian Learning Networks for Domain-Invariant Speaker Verification and Anti-Spoofing

  Submitted to *Interspeech 2025*
- **Jin Li**, Xurong Xie, Nan Yan, Lan Wang. Two Streams and Two Resolution Spectrograms Model for End-to-end Automatic Speech Recognition

  Accepted by *Interspeech 2023* ***(oral)***
- **Jin Li**, Nan Yan, Lan Wang. FDN: Finite Difference Network with Hierarchical Convolutional Features for Text-independent Speaker verification

  Accepted by *APSIPA 2023* ***(oral)***
- **Jin Li**, Nan Yan, Lan Wang. Unsupervised Cross-lingual speech emotion recognition using pseudo multilabel

  Accepted by *ASRU 2021* ***(oral)***

- **Jin Li**, Haibin Liu, Nan Yan, Lan Wang. Enhanced Memory Network: The novel network structure for Symbolic Music Generation
- Jiatian Qian, Duan Wang, **Jin Li**, Yanni Chen, Jian Zu, Lan Wang, Nan Yan. The Recognition of Children with Autism Spectrum Disorder by Combining Power Spectrum and Connectivity Features of EEG Signals in Emotion Recognition Tasks
- **Jin Li**, Shuai Li, Jiaming Wang, Kai Wang. Fuzzy Recognition of Vehicle's License Plate in the Intelligent Residential District of The Internet of Things, *China Science and Technology Information,* 2013, 13:89. (in Chinese)

PATENTS

- **Speaker Recognition Method Based on Speech Speed Enhancement Operator** (No.: CN202111262103.1, **the first inventor**) *2021*

RESEARCH & PROJECTS

- **Topic: Out-of-Domain Generalization for Speaker Verification and Anti-Spoofing**
  - Propose a novel Bayesian neural network method to solve domain generalization problem in speaker verification and anti-spoofing
  - In addition, a novel Gaussian-based manifold data augmentation is introduced to model the uncertainty of the model for out-of-domain evaluation.
  - The result outperforms baseline and SOTA.
- **Topic: Forensic speaker recognition for the Ministry of Public Security, SIAT** *Apr. 2021-Mar. 2022*
  - Propose a novel plug-and-play module to incorporate the prosodic features into the model with raw wave input

- The result outperforms current state-of-the-art research works

➢ **Topic: Symbolic music generation, SIAT** *Apr. 2021-Oct. 2021*

- Propose a novel architecture for symbolic music generation
- The result outperforms current state-of-the-art works on the Nottingham music dataset

➢ **Topic: Multiscale spectrograms and multistream model for ASR, SIAT**
Sep. 2020-Apr. 2021

- Proposed multistream architecture with different scale features
- A novel fusion design that aggregates two-stream features
- Outperformed SOTA models on HKUST telephone speech dataset

➢ **Topic: Unsupervised cross-lingual speech emotion recognition, SIAT**
Sep. 2020-Apr. 2021

- Proposed a novel framework with pseudo-labels in the target domain
- An external memory design with a memory update mechanism
- Vastly exceed the baseline model with 17.77% improvement

➢ **Topic: Spatial-temporal action recognition, SIAT** *May 2019-Sep. 2020*

- Proposed novel hierarchical attention for spatial-temporal action recognition model
- Performance improvements compared with the baseline model

➢ **Topic: Robust single object tracking via a fully convolutional siamese network. Image Analysis and Learning Lab, HCI, Heidelberg University**
Dec. 2018-Mar. 2019

- Proposed an ensemble method to overcome the drawback of fully convolutional siamese network
- Enhanced feature representation by combining the advantage of Conv-GRU unit with ground truth feature

- The code is publicly available on my GitHub *own_siamtracker* repository

➢ **Topic: Deep reinforcement learning for object tracking in videos. Image Analysis and Learning Lab, HCI, Heidelberg University**

May. 2018-Jun. 2018

- Re-implement YOLO and extract feature from FC1 as input into RNN
- Utilize the advantage of RNN to memorize the location of the object and predict the location of the object in the next time frame
- Model the tracking process by deep reinforcement learning method
- The code is publicly available on my GitHub *ReinforcementLearningTracker-pytorch* repository

➢ **Topic: Object tracking for the general dataset. Image Analysis and Learning Lab, HCI, Heidelberg University** *Feb 2018-May. 2018*

- Literature study for object detection problem
- Re-implement “fully-convolutional siamese network for object tracking” paper and analyze the advantages and disadvantages
- Re-implement “Recurrent Filter Learning for Visual Tracking” paper and analysis the advantages and disadvantages

➢ **Topic: Object tracking for mice. Image Analysis and Learning Lab, HCI, Heidelberg University** *Nov. 2017-Feb. 2018*

- Build the novel model using U-Net for biological dataset tracking problems especially for mice tracking
- Implement and apply U-Net for mice tracking
- Compute and utilize vector fields as an input feature for U-Net
- Train the U-Net then predict vector field in order to solve object overlapping problem
- The code is publicly available on my GitHub *mice* repository

➢ **Topic: Hyperparameter tuning using Gaussian Process. Image Analysis and Learning Lab, HCI, Heidelberg University** *Jul. 2017-Sep. 2017*

- Implement Gaussian Process step-by-step
- Solve nonlinear regression problem using Gaussian Process
- Binary and multi-class classification tasks using Gaussian Process
- Implement Bayesian optimization under different acquisition functions in the multi-dimensional case
- Tune hyperparameters of a prediction model using Bayesian optimization in high dimension
- The code is publicly available on my GitHub *Gaussian_process* repository

➢ **Topic: Semi-supervised learning for art galleries. Computer Vision Lab, HCI, Heidelberg University** *Feb. 2017-May 2017*

- Similarity matric learning by deep learning method for duplicates detection
- Combine a few art galleries of the Internet and get rid of duplicates among them using pre-trained AlexNet

➢ **Topic: Web-Based Convolutional Neural Networks for Cell Classification Biomedical Computer Vision Group, Heidelberg University** *WS2016/2017*

- To classify cells, whether normal or phenotype
- Web-based implementation and implement CNN using JavaScript

LEADERSHIP, COMMUNICATION & INTERPERSONAL SKILLS

➢ **Vice President, The Hong Kong Polytechnic University Chapter of SIAM, Hong Kong** *2022-2023*

- Organized colloquium in applied mathematics to help student realize current mainstream topics in applied mathematics

- Leading a team and distribute works

➢ **Vice President, Heidelberg University Chapter of SIAM, Germany**

2017-2018

- Organized colloquium in applied mathematics to help student realize current mainstream topics in applied mathematics
- Organized both academic and industrial talks on mathematical related topics to carry students to the frontier of research and industrial applications
- Be invited as a representative of the chapter of SIAM to share my successful experiences on activity organization during both SIAM annual meetings and European SIAM annual meetings

➢ **Class President, Ocean University of China, China** *2010-2014*

- Coordinated the work of the class committee and host class meetings
- Organized the class trip and class party
- Lead well-learned students to help the ill-learned ones
- My class receives lots of honors under my leadership such as *Outstanding Class* and *Outstanding Youth League Branch*

➢ **General Secretary, Student Union of School of Information Engineering, Ocean University of China, China** *Sep. 2012-Sep. 2013*

- Directed daily work of Student Union and coordinating relationship of other departments
- Cultivated, supervised, and checked the leaders of Student Union

➢ **Student Research Training Program of Ocean University of China, China (Undergraduate Thesis, grade: Honor)** *2013-2014*

- Topic: Recognition of Vehicle's License Plate Based on Neural Networks
- As the prime principal and the project supported by the chairman foundation

(Grant No. 2013CX006)

- Published a research paper in *CHINA SCIENCE AND TECHNOLOGY INFORMATION* in July 2013

COMPETITIONS

- **The ACM/ICPC of Shandong Province** ***Jun. 2012***
- **The Freescale Cup Intelligent Car Racing** ***Jun. 2012***
- **China Undergraduate Mathematical Contest in Modeling** ***Sep, 2011***

HONORS & AWARDS

- **Research Postgraduate Scholarship (1/100)** ***2022-2025***
- **SIAM Student Travel Grant Award (1/100)** ***2017, 2018***
- **European SIAM Student Travel Grant Award** ***2017***
- **Outstanding Bachelor Thesis (1/1000)** ***2014***
- **Chairman Fund 2013 of Qingdao Institute of Technology (1/1000)** ***2013***
- **National Scholarship, Ministry of Education of People's Republic of China (1/1000, Student's highest honor at University)** ***2012***
- **Outstanding Class (5/100)** ***2012***
- **Outstanding Youth League Branch (5/100)** ***2012***
- **Professional Practice and Diathesis Developing Scholarships (2/100) 2011**
- **Excellent morality and Social Practice Scholarship (2/100)** ***2012***
- **Outstanding Student Cadre (3/100)** ***2011, 2012***
- **The Second-class Scholarship (2/100)** ***2011***

- **Professional Practice and Diathesis Developing Scholarship (2/100)** ***2011***
- **Outstanding League Cadre (3/100)** ***2011***
- **The Third Prize in the Marketing Management Competition** ***2010***

LANGUAGES

- **English (Professional Proficiency)**
- **Chinese (Native)**
- **German (Elementary Proficiency)**

INTERESTS

- **A big fan of marathons, hiking, bouldering, and swimming**