**Bo Miao**

 [bomiaobbb@gmail.com](mailto:bomiaobbb@gmail.com) │ <bomiao.site>

**ACADEMIC OBJECTIVE**

Deep Learning, Computer Vision, Self-supervised Learning, Video Segmentation

**EDUCATION**

**The University of Western Australia**, Perth, Australia Jan. 2021-Current

*Ph.D. student in Computer Science (CS)*

Supervisor: Professor Ajmal Mian and Professor Mohammed Bennamoun

**University of Jinan**, Jinan, China Sept. 2015-Jun. 2018

*Master’s Degree in Signal and Information Processing (EE)*

Supervisor: Professor Yulin Zhang

GPA: 87.2/100

*Dissertation: Research on Classification of ADHD Based on Feature Selection in Resting-state fMRI.*

Core courses: Wavelet Analysis 93/100, Modern Signal Analysis 92/100, etc.

**University of Jinan**, Jinan, China Sept. 2011-Jun. 2015

*Double Bachelor’s Degrees in Communication Engineering (EE) and Accounting*

GPA: 77.0/100

Core courses: Signals and Systems 92/100, Analogue Electronics Basis 86/100, etc.

**PROFESSIONAL EXPERIENCES**

**Research Assistant, The Chinese University of Hong Kong, Shenzhen, China** 05/2020-12/2020

Robotics & Artificial Intelligence Laboratory Supervisor: Assistant Professor Tin Lun Lam

* Carried out indoor scene recognition based on scene parsing and attention mechanism;
* Carried out video anomaly detection based on self-supervised learning and memory networks.

**Machine Learning Engineer, SINA Weibo, China**07/2018-09/2019

Machine Learning R&D Department

* Carried out video recognition to label the Micro-blogs using PyTorch;
* Implemented personalized recommendations of Micro-blogs using C++;
* Carried out million-level Micro-Blogs data processing and provided features for recommendation engine using Storm;
* Found hotspots of Micro-blogs through data mining;
* Statisticized Micro-Blog data performance of various aspects using MySQL, Hive, Redis and Kafka.

**PUBLICATIONS**

**Conference:**

* ***Bo Miao***, Mohammed Bennamoun, Yongsheng Gao, Ajmal Mian, "Spectrum-guided Multi-granularity Referring Video Object Segmentation", *International Conference on Computer Vision (ICCV)*, 2023.
* ***Bo Miao***, Mohammed Bennamoun, Yongsheng Gao, Ajmal Mian, "Self-Supervised Video Object Segmentation by Motion-Aware Mask Propagation", *IEEE International Conference on Multimedia and Expo (ICME)*, 2022.
* ***Bo Miao***, Liguang Zhou, Ajmal Mian, Tin Lun Lam, Yangsheng Xu, "Object-to-Scene: Learning to Transfer Object Knowledge to Indoor Scene Recognition", *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021.
* ***Bo Miao***, Junling Guan, Liangliang Zhang, Qingfang Meng, Yulin Zhang, "Automated epileptic seizure detection method based on the multi-attribute EEG feature pool and mRMR feature selection method", *International Conference on Computational Science* *(ICCS)*, 2019.
* ***Bo Miao***, Yulin Zhang, "A Feature Selection Method for Classification of ADHD", *International Conference on Information, Cybernetics and Computational Social Systems (ICCSS)*, 2017. **Best Paper**
* ***Bo Miao***, Junling Guan, Qingfang Meng, Yulin Zhang, "Fractional amplitude of low-frequency fluctuation and degree centrality in autistic children: a resting-state fMRI study", *International Workshop on Pattern Recognition (IWPR)*, 2018.

**Journal:**

* ***Bo Miao***, Mohammed Bennamoun, Yongsheng Gao, Ajmal Mian, " Region Aware Video Object Segmentation with Deep Motion Modeling", *arXiv,* 2022.
* ***Bo Miao***, L. L. Zhang, J. L. Guan, Q. F. Meng, Y. L. Zhang, "Classification of ADHD individuals and neurotypicals using reliable RELIEF: A resting-state study", *IEEE Access,* 2019.

**LANGUAGE & SKILLS**

* Language: Mandarin (native), TOEFL (97, R25, L25, S21, W26)
* Programming: PyTorch, Python, C++, MATLAB, Java, Shell, Latex
* Data Storage: MySQL, Hive, Redis, Kafka, etc.

**RESEARCH EXPERIENCES**

**Research on indoor scene recognition & video anomaly detection** 05/2020-12/2020

*Research Assistant,*Supervisor: Assistant Professor Tin Lun Lam

* Proposed a novel method to transfer object knowledge from scene parsing to scene recognition using a novel attention mechanism.
* Used self-supervised methods that based on object detection, image reconstruction, memory networks, and adversarial training to detect anomaly frames in videos.

**Research on Detection of Epileptic Seizure Based on Electroencephalogram (EEG)** 08/2018-06/2019

*Master Student*, Supervisor: Professor Yulin Zhang

* Proposed a novel method for epileptic seizure detection. The proposed method first extracted time domain features, time-frequency domain features, nonlinear features and entropy based features from EEG signals and constructed a multi-attribute EEG feature pool. Then, mRMR, a feature selection method based on mutual information, was used to select the discriminative features, and finally the support vector machine was used for epileptic seizure detection.

**Research on Attention Deficit Hyperactivity Disorder (ADHD) and Autism Based on Resting-state Functional Magnetic Resonance Imaging (Rs-fMRI)** 09/2017-08/2018

*Master Student*, Supervisor: Professor Yulin Zhang

* Proposed a novel method for localization of abnormal brain regions and diagnosis of ADHD. The proposed method first preprocessed time series Rs-fMRI images using age and sex correction, brain template registration, spatial smoothing, etc. Then, images were transformed into frequency domain, and principle components and entropy features were extracted. After that, RELIEF, a feature selection method based on Euclidean distance was used for feature selection and localization of abnormal brain regions. Finally, classifiers that contain support vector machine, random forest, decision tree and logistic regression were used for ADHD diagnosis.
* Proposed a method based on two-sample t-test to analyze spontaneous brain activity changes and connectivity changes in autistic children.

**PROFESSIONAL ACTIVITIES**

Journal Reviewer: IEEE Access, IET Image Processing, Biomedical Engineering Online

Conference Reviewer: IROS