Lebo Wang, Ph.D. candidate

Email: lebo.wang@email.ucr.edu | Mobile: 951-786-8620 | https://lebo-wang.github.io/

SKILLS

- **Machine Learning:** Computer vision for medical images classification tasks on functional MRI data
- **Programming:** Python and C++ (image processing algorithm design and implementation)

EDUCATION

- **University of California, Riverside** — Riverside, CA
  Ph.D. in Department of Electrical and Computer Engineering; GPA: 3.92 — Sep 2016 – Jun 2020 (expected)
- **Fudan University** — Shanghai, China
  M.Sc in Microelectronics, School of Information Science and Technology — Sep 2012 – Jul 2015
- **Zhejiang University** — Hangzhou, China
  B.Eng in Department of Information Science and Electronic Engineering — Aug 2008 – Jul 2012

RESEARCH EXPERIENCE

- **Spatial Graph Convolutional Network for fMRI Data Classification** — Aug 2018 - present

  Publication: Connectivity Based Graph Convolutional Network (cGCN) for fMRI Data (forthcoming)

  - Spatial based graph convolution network on functional MRI data with Keras and Tensorflow, improving classification accuracy from 65% to 72% with the graph convolution on graph-representation data
  - Efficient k-nearest neighbors algorithm for large scale analysis of time-series datasets based on graph theory, which is effective to implement multimodal correlation analysis for graph construction
  - Edge function design of spatial graph convolution networks with improved spatial feature extraction

- **Convolutional Neural Network for Interpretable fMRI Data Analysis** — Nov 2017 - Aug 2018

  Publication: Application of Convolutional Recurrent Neural Network for Individual Recognition Based on Resting State fMRI Data (Frontiers in Neuroscience 2019, doi: 10.3389/fnins.2019.00434)

  - Convolutional Neural Network and Recurrent neural networks on non-Euclidean fMRI data, achieving improved accuracy from 94% to 98% with spatiotemporal features on large scale time-series analysis
  - Interpretable visualization based on convolutional models, including the saliency region extraction with soft-attention mechanism, input occlusion, guided back-propagation and activation map

- **Fault Tolerant Sparse LU Factorization on CPU/GPU Platforms** — Oct 2016 – Jun 2017

  - Achieved task graph scheduling and parallelism prediction based on dependency graph and breadth-first search for sparse LU matrix factorization on hybrid CPU/GPU platform with C++ and CUDA
  - Implemented low-overhead (<1%) algorithm-based fault tolerance algorithm for sparse LU factorization

- **Deep Learning for Images, Time Series and Reinforcement Learning** — Mar 2016 - Sep 2016

  - Implemented CNNs for image classification, recurrent neural networks (LSTM and GRU) for time series modeling and unsupervised learning with Python from scratch (Stanford CS231n course)
  - Implementation of Q-learning for the OpenAI Gym on Pytorch (Deepmind reinforcement learning course)

INTERNSHIP

- **Lam Research** — Jun 2017 – Sep 2017

  - Dimension reduction based on denoising stacked autoencoder for high-dimensional data on Tensorflow
  - Forward Variable Selection for abnormal detection based on bivariate and multivariate analysis, and nonlinear kernel extension for Forward Variable Selection with scikit-learn