

EDUCATION

- **Louisiana State University** Baton Rouge, LA
Ph.D. in Computer Science, GPA 3.7/4.0 *Aug. 2016 – Present, Advisor: Dr. Mingxuan Sun*
- **University of Science and Technology of China** Hefei, China
M.S. in Solid Mechanics *Sept. 2013 – Jun. 2016*
- **University of Science and Technology of China** Hefei, China
B.S. in Theoretical and Applied Mechanics *Sept. 2009 – Jun. 2013*

RESEARCH INTERESTS

My research focuses on developing computationally efficient machine learning as well as deep learning models and algorithms, with applications in recommender systems, time-series analysis, and natural language processing.

RESEARCH EXPERIENCE

- **Louisiana State University** Baton Rouge, LA
Research Assistant *Aug. 2016 - Present*
 - **Geometric Hawkes process with Graph CNN:** Design a framework that integrates the graph convolutional recurrent neural network and Hawkes processes to model temporal events. The model can be applied to a collection of correlated temporal sequences of recurrent events, and it is able to correlate each sequence through graph embedding. We implement it in **Tensorflow**, using **IPTV**, **Reddit**, and **Yelp** (4GB) datasets. [AAAI'19]
 - **Local Low Rank Hawkes Process:** Propose a framework that integrates the kernel smoothing and the Hawkes process to model the temporal events of user-item interactions. In this model, we assume that the intensity parameter matrix is locally low-rank. With non-parametric kernel smoothing, each user-item pair can be simulated by a series of local matrix mappings. Also, design an efficient convex optimization algorithm to estimate model parameters and present a parallel algorithm to further increase the computation efficiency. We use **IPTV**, **Reddit**, and **Yelp** (4GB) datasets. [ICDM'18]
 - **Demographic Inference via Transfer Learning:** Build a Transfer Matrix Factorization method to solve the problem of predicting user demographics using ratings in a target domain, through knowledge transfer from the source domain, in which users' ratings and the corresponding demographics are available. Also, develop an iterative algorithm for this optimization and theoretically show its convergence. Extensive experiments using real-world data sets demonstrate that our model can achieve higher classification accuracy, regardless of the amounts of labeled users, the sparsity of ratings, and the difference of demographic distribution in source and target domains. We use **MovieLens**, **Flixster** and **BookCrossing** datasets. [ICDM'18]
 - **Explainable Recommender System and Text Mining:** Build an explainable recommender system that can give explanations with rating predictions. For each user-item pair, the key idea is to use latent user and item features as the input to LSTM layers to generate a user review for an item. We also adopt reinforcement learning to enhance the framework such that the explanations are not only close to ground truth but are capable of increasing the accuracy of rating classification. We implement it in **Caffe**, using the **Amazon Review** (20GB) Dataset.
- **University of Science and Technology of China** Hefei, China
Research Assistant *Sept. 2013 - Jun. 2016*
 - **Image Processing:** Improve the Temporal Phase Extraction Algorithm by investigating the window size of the Windowed Fourier Transform. Also construct the optical measurement platform for measuring small deformation.
- **National Center for Nanoscience and Technology** Beijing, China
Research Assistant *Jul. 2012 – Aug. 2013*
 - **Material Mechanics:** Investigate the morphology effect to the mechanical properties of the graphene oxide fillers in nanocomposites and utilize mathematical models to simulate experiment data.
- **RoboGame at University of Science and Technology of China** Hefei, China
Team Leader *May. 2011 – Oct. 2011*
 - **RoboGame Competition:** Develop a housekeeping robot which can make coffee and send it to people along the black line.

PUBLICATIONS

- [4]: **Jin Shang** and Mingxuan Sun, **Geometric Hawkes processes with graph convolutional recurrent neural Networks**, in Proc. of the AAAI Conference on Artificial Intelligence (AAAI), Hawaii, USA, Jan. 2019.
- [3]: **Jin Shang** and Mingxuan Sun, **Local low-rank Hawkes processes for temporal user-item interactions**, in Proc. of the IEEE International Conference on Data Mining (ICDM), Singapore, Nov. 2018.
- [2]: **Jin Shang**, Mingxuan Sun and Kevyn Collins-Thompson, **Demographic inference via knowledge transfer in cross-domain recommender systems**, in Proc. of the IEEE International Conference on Data Mining (ICDM), Singapore, Nov. 2018.
- [1]: **Jin Shang**, Yuli Chen et al., **Effect of folded and crumpled morphologies of graphene oxide platelets on the mechanical performances of polymer nanocomposites**, in Polymer 68 (2015): 131-139.

AWARDS

- **ICDM'18**: ICDM 2018 Student Travel Award(ranked 2nd in list of student recipients in the U.S.)
- **AAAI'19**: AAAI 2019 Student Scholar and Volunteer Program

TEACHING ASSISTANT

- **CSC 1253**: Computer Science I with C++, Fall 2016
- **CSC 1254**: Computer Science II with C++, Spring 2017

CLASS PROJECTS

- **Generating head portrait by DCGAN**:
First crawl some images from some website and use a face detection tool to generate head portrait images. Then use the DCGAN model to generate head portrait images. We crawl 120K images and implement it in **Tensorflow**.

PROGRAMMING SKILLS

- **Languages**: Python, Matlab, C++, Java
- **Deep Learning Framework**: Tensorflow, Caffe