Xinyang Zhang

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Education

- **Tsinghua University**
  BS, Computer Science and Technology — *Expected 07/2018*
  GPA: 91/100, Top 10%
- **University of Illinois at Urbana-Champaign**
  Research Assistant, Computer Science Department — *06/2017 – 09/2017*
  Supervised by Prof. Kevin Chen-Chuan Chang

Working Paper

Aravind Sankar*, Xinyang Zhang*, and Kevin C.C. Chang. Motif-based Convolutional Neural Network on Graphs. (**equal contribution*, working in progress, targeting *IJCAI 18'* for submission)

Jiezhong Qiu, Xinyang Zhang, Jie Tang, Tracy Xiao Liu, and Shaoxiong Wang. DeepBehave: Learning Deep Representations for Social Behavioral Data. (submitted to *WWW18'*)

Research Interest

Social networks, and more broadly, data mining, deep learning, and natural language processing

Research Experience

Motif-based Convolutional Neural Network on Graphs — **DAIS Lab, UIUC**
Independent research, Supervised by Prof. Kevin C.C. Chang — *Summer 2017*

- We developed a novel neural network architecture Motif-CNN which generalized CNN to graphs, and incorporated domain knowledge by using motifs for convolution. Superior to existing methods, our model is naturally applicable on both homogeneous and heterogeneous graphs.
- Motif-CNN captures higher-order structural and feature information by combining the information extracted from multiple patterns through deeper layers.
- Our experiments on semi-supervised learning tasks on 7 real-world graphs indicated significant gains over existing graph CNNs and respective state-of-the-art techniques.
- We are targeting *IJCAI18'* for submission.

Representation Learning from Social Behavioral Data — **Knowledge Engineering Group, Tsinghua**
Independent research, Supervised by Prof. Jie Tang — *12/2016 – 05/2017*

- This project focused on the problem of embedding learning for entities using social behavioral data, where challenges arose from dynamic, interdependent, and huge volume of data.
- We proposed the DeepBehave model to address the challenges by considering both users' behavior history and the structure of users' ego networks. Our method learns embeddings from a three step process of context graph building, context graph sampling, and context embedding learning.
- We applied DeepBehave to learn behavior representations on two large datasets — Weibo and AMiner, to support user behavior prediction. Experiments show that the proposed approach significantly improve the prediction performance compared to several alternative methods.
- Our paper has been submitted to *WWW18'*.

Group-aware Deep User Behavior Modeling — **Knowledge Engineering Group, Tsinghua**
Independent research, Supervised by Prof. Jie Tang — *10/2017 – Present*

- This is an on-going project I am working on. The aim of this project is to design an end-to-end model which captures users' behavior dynamics, as well as the social influence from users' friends and social groups.
- We proposed a deep architecture based on hierarchical multi-layer attention networks.
- We further addressed the problem of group level influence by identifying influential users from a user group, and explicitly model their influence on group members.

Internship

Research Intern — **AISpeech Co., Ltd.**
Spoken dialog group, Supervised by Prof. Kai Yu — *06/2016 – 08/2016*

- Involved in development of the company's hybrid intellectual spoken dialog system, as a core group member.
- Solved the problem of dialog embedding with LSTM auto-encoder.

Teaching

Teaching Assistant — **Tsinghua University**
Software Engineering, Taught by Prof. Xiaoying Bai — *09/2017 – 01/2018*

Selected Course Grade

- **Aritificial Neural Networks (97/100, rank 1st)**
  - **Course Project:** Emotion Recognition From Video (rank 1st)
  - We (my classmate and I) designed a novel convolution-recurrent neural network framework to recognize emotion from video clips.
  - Our experiment on CHEAVD dataset (a Chinese emotion dataset in the wild), achieved performance comparable to the state-of-the-art in MEC2016 contest of Chinese Pattern Recognition Conference.
- **Fundamentals of Search Engine Technology (95/100, rank 2nd)**
  - **Course Project:** Tsinghua Search Engine (rank 1st)
  - We (my classmate and I) built a fully functional search engine with a crawler, a indexer, a link analysis module, and a front end webpage.
  - We designed a novel webpage de-duplication method based on text features and KD-tree accelerated.
  - Our search engine achieved millisecond level response, compared to most other projects which only gave response in seconds.
- **Principles of Signal Processing (100/100, rank 1st)**
- **Principles and Techniques of Compilers (97/100)**
- **Calculus A1 (95/100)**
- **Probability and Statistics (95/100)**
- **Introduction to Complex Analysis (96/100)**
- **Professional Practice (Overseas Research Practice) (95/100, rank 2nd)**

Awards and Honors

- **Scholarship of Academic Excellence, Tsinghua University, 2016**
- **2nd Prize in National High School Applied Physics Competition, 2013**
- **1st Prize in National Olympiad in Informatics in Provinces, 2011**

Extra-Curricular Activity

- **Member of Photography Team**
  Student Art Group, Tsinghua University — *2015 – Present*
  When I have time, I take photos. I have always loved traveling and landscape photography. My photos have been on exhibition several times in the campus, together with the work from my fellow team members of the student art group, Tsinghua University.
- **Member of Swimming Team**
  Department of Computer Science — *2016 – Present*

Technical Skills and Others

- **Programming Languages:** Proficient in: C, C++, Python, Matlab, Javascript, TeX
  Also experience with: x86/MIPS Assembly, Java, Verilog, Julia.
- **Languages:** English (TOEFL 108 (Speaking 26), GRE 156/167/3.5), and of course Chinese