Songyang Zhang

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Education

University of Rochester, USA **Aug.2018 – Present**

- PhD Student in Computer Science, Advisor: Jiebo Luo

Zhejiang University, China **Sep.2015 – Mar.2018**

- Master of Science in Computer Science and Technology
- Overall GPA: 3.56/4.00 (86.84/100)

Southest University, China **Aug.2011 – Jun.2015**

- Bachelor of Engineering in Computer Science and Technology
- Rank: 15th of the cohort (among 132 students)

Publications & Research Papers

- **Songyang Zhang**, Houwen Peng, Jianlong Fu, Jiebo Luo, " Learning 2D Temporal Adjacent Networks for Moment Localization with Natural Language", AAAI, 2020
- **Songyang Zhang**, Houwen Peng, Le Yang, Jianlong Fu, Jiebo Luo, " Learning 2D Temporal Adjacent Networks for Temporal Action Localization", Technical Report
- **Songyang Zhang**, Jinsong Su, Jiebo Luo, "Exploiting Temporal Relationships in Video Moment Localization with Natural Language", ACM Multimedia Conference, 2019
- **Songyang Zhang**, Xiaoming Liu, Jun Xiao, "On Geometric Features for Skeleton-Based Action Recognition Using Multilayer LSTM Networks", Proc IEEE Winter Conference on Application of Computer Vision (WACV), March 2017
- **Songyang Zhang**, Jun Xiao, Xiaoming Liu, Yang Yi, Yueting Zhuang, "Fusing Geometric Features for Skeleton-Based Action Recognition using Multilayer LSTM Networks", IEEE Transactions on Multimedia (TMM), Accepted
- Jiageng Feng, **Songyang Zhang**, Jun Xiao, "Explorations of skeleton features for LSTM-based action recognition", Multimedia Tools and Applications (MTAP), 2017
- **Songyang Zhang**, "Surveillance Video Synopsis Based on Object Trajectory Analysis", Undergraduate Thesis, May 2015

Research Experience

PhD Researcher, University of Rochester **Aug.2018 - Present**

Project: **Moment Localization via Natural Language**

- This task aims to temporally find related videos clips by a given sentence.
- The goal of this project focuses on searching segments by considering video as general sequence data.

Project: **Temporal Action Localization**

- This task aims to classify and localize the action segments from long, untrimmed videos.
- The goal of this project focuses on finding action segments without generating proposals.

Master Researcher, Zhejiang University **Mar.2016 - Present**

Project: **Skeleton-Based Action Recognition**

- Used a simple universal spatial modeling method perpendicular to the RNN model enhancement
- Proposed a multi-stream LSTM architecture with a new smoothed score fusion technique to learn classification from different geometric feature streams
- Identified the geometric relational features that outperform the other features, achieved good performance on four datasets

Project: **Skeleton-Based Action Detection** **Feb.2017 - May.2017**

- Applied Temporal Segment Network by Xiong et.al combined with the framework in the recognition project
- Generated temporal region proposals with motions using the snippet network, classified the proposals into different categories with activity network
- Achieved state-of-the-art result for OAD dataset

Project: **Grounding Scene Graphs for Natural Language Image Retrieval** **Dec.2016 – Mar.2017**

- Focused on natural language image retrieval via unsupervised grounding textual phrases in visual content
- Parsed the referential expression into the triple format, generated the vector representation, technically reconstructed the subject, object and relational phrases
- Adapted scene graphs to retrieve images by natural language

Undergraduate Researcher, Robocup Lab, Southeast University **Jan.2013 – Oct.2014**

Project: **RoboCup 3D Simulation**

- Aimed to improve the robot's long distance kicking skill
- Optimized the joint positions and the time lag via hill-climbing algorithm based on the initial model frame
- Achieved an average kicking distance of 13 meters, exceeding the original average performance by 5 meters

Professional Experience

Intern, Microsoft Research Asia **May.2019 – Aug.2019**

- Mentors: Jianlong Fu, Houwen Peng
- Topic: Moment Localization with Natural Language

Intern, Tencent AI Lab **Mar.2018 – Aug.2018**

- Mentors: Lin Ma, Linchao Bao
- Topic: Temporal Action Localization

Teaching Assistant, Fundamentals of Multimedia Class, Zhejiang University **Mar.2017 – Aug.2017**

- Coordinated and organized various discussion and laboratory sessions for the class
- Reviewed students' assignments and resolved their questions

Honors & Awards

HACS Temporal Action Localization Challenge at ICCV 2019, Rank 1 **Oct. 2019**

Project Prizes - Large Scale 3D Human Activity Analysis Challenge in Depth Videos

- Rank 4 in Recognition Track, 6 in Detection Track, granted by ICME 2017 Workshop **Apr.2017**
- Rank 6, granted by ACCV 2016 Workshop **Oct.2016**

Project Prizes – Robocup 3D Simulation

- Champion, RoboCup China Open 2014 Competition **Oct.2014**
- Rank 5~8, Robocup 3D Simulation, Robocup 2014 Competition, Brazil **Jul.2014**

3rd Prize, twice for Southeast University Programming Contest **Jul.2013, May.2014**

Award of Excellence, Southeast University Mathematical Modelling Contest **Jul.2013**

Twice for Award of Honor for Graduate (top 35%), Zhejiang University **May.2016, Oct.2017**

Jiangsu Yikai Scholarship, Southeast University **May.2014**