

Jiang Liu

Email: jiangl1@cs.cmu.edu • Ph: +1 (412) 377-5220
Personal webpage: <http://www.cs.cmu.edu/~jiangl1>

EDUCATION

- Carnegie Mellon University, School of Computer Science** Pittsburgh, PA, USA
M.S. in Language Technologies (GPA: 4.00/4.33) Aug 2017 – Aug 2019 (Expected)
- Fully funded by the Fellowship provided by the Language Technologies Institute
 - Graduate Research Assistant of the Informedia group, supervised by Prof. Alexander G. Hauptmann
 - Teaching Assistant for a graduate-level course 11-775: *Large-Scale Multimedia Analysis*
 - Coursework: Machine Learning, Computer Vision, Search Engine, Natural Language Processing, Machine Translation
- Chongqing University of Posts and Telecommunications** Chongqing, China
B.Eng. in Communication Engineering (GPA: 3.85/4.00, Rank: 1/220) Sep 2013 – Jun 2017
- Recipient of the first-class scholarship for three times
 - Undergraduate Research Assistant of the Image and Video Processing Group, supervised by Prof. Chenqiang Gao

RESEARCH EXPERIENCE

- Carnegie Mellon University, School of Computer Science**
Graduate Research Assistant of the Language Technologies Institute Aug 2017 – Now
- Supervisor: Professor Alexander G. Hauptmann
 - Research areas: Surveillance event detection; crowd analysis; action recognition in videos
- Carnegie Mellon University, School of Computer Science**
Visiting Researcher of the Language Technologies Institute Jul 2016 – Jan 2017
- Supervisor: Professor Alexander G. Hauptmann
 - Research areas: Complex event detection; human rights events reconstruction using social media videos
- Chongqing Key Laboratory of Signal and Information Processing**
Undergraduate Research Assistant, Image and Video Processing Group May 2014 – Jul 2016
- Supervisor: Professor Chenqiang Gao
 - Research areas: Event and action detection in videos; fine-grained object recognition; deep learning

REFERRED PUBLICATIONS

- **Jiang Liu**, Chenqiang Gao, Deyu Meng, Alexander G. Hauptmann, DecideNet: Counting Varying Density Crowds Through Attention Guided Detection and Density Estimation, *IEEE CVPR, 2018*.
- **Jiang Liu**, Jia Chen, De Cheng, Chenqiang Gao, Alexander G. Hauptmann, Rewind to track: Parallelized Apprenticeship Learning with Backward Tracklets, *IEEE ICME, 2017*.
- **Jiang Liu**, Chenqiang Gao, Deyu Meng, Wangmeng Zuo, Two-stream contextualized CNN for fine-grained image classification, *AAAI, 2016*.
- Chenqiang Gao, Pei Li, Yajun Zhang, **Jiang Liu**, Lan Wang, People counting based on head detection combining Adaboost and CNN in crowded surveillance environment. *Neurocomputing, 2016*.
- Chenqiang Gao, Yinhe Du, **Jiang Liu**, Luyu Yang, and Deyu Meng, A New Dataset and Evaluation for Infrared Action Recognition, *CCF CCCV, 2015 (Best paper honorable mention)*.
- Lan Wang, Chenqiang Gao, **Jiang Liu**, Deyu Meng, A novel learning-based frame pooling method for Event Detection, *Signal Processing, 2017*.
- Luyu Yang, **Jiang Liu**, Chenqiang Gao, An Error-activation-guided Blind Metric for Stitched Panoramic Image Quality Assessment, *CCF CCCV, 2017*.
- Chenqiang Gao, Luyu Yang, Yinhe Du, Zeming Feng, **Jiang Liu**, From constrained to unconstrained datasets: an evaluation of local action descriptors and fusion strategies for interaction recognition, *World Wide Web, 2016*.

PROJECTS

- IARPA DIVA: Deep Intermodal Video Analytics** Aug 2017 – Now
- Supervised by Prof. Alexander G. Hauptmann and Prof. Kris M. Kitani
 - Designing and developing effective pipeline to detect specific events in real-world surveillance videos with 3D neural network features and various feature encoding strategies.
 - Obtain the 2nd place result on four events in the TRECVID Surveillance Event Detection (SED) 2017 competition.
 - Improving the baseline results by incorporating synthetic data and spatial-temporal data augmentation methods.
 - Implementing GPU memory efficient paradigms to train very deep neural networks on resource-constrained machines (enabling 40% increasing in training batch size).
- CMU's Human rights video analysis toolbox** Jul 2016 – Jan 2017
- Supervised by Prof. Alexander G. Hauptmann
 - Participated in creating computer vision and machine learning based tools to analyze human rights videos.
 - Employing person re-identification features to track person in unconstrained videos via apprenticeship learning.

Flower recognition based on contextualized Convolutional Neural Network Mar 2015 – Mar 2016

- Supervised by Prof. Chenqiang Gao
- Inspired from human's cognition system, implemented a two-stream contextualized deep learning framework to address fine-grained image classification task.
- The method achieved the state-of-the-art performance on public datasets (Oxford Flower and Caltech-UCSD Birds) and the paper was accepted by AAAI-16 as a student poster.
- Developed Windows Phone and Web Apps for practical use.

People counting in the classrooms combined Adaboost and CNN May 2015 – Oct 2015

- Supervised by Prof. Chenqiang Gao
- Developed a person counting system combined Adaboost algorithm with CNN framework.
- The false alarm rate was greatly reduced with the proposed method.
- The system had been put into practical use in the university and served more than ten thousand students everyday.

Action detection and recognition in infrared surveillance videos May 2015 – Oct 2015

- Supervised by Prof. Chenqiang Gao
- Participated in collecting and capturing the first infrared action recognition datasets
- Conducted extensive experiments to different video descriptors (IDT, HOG3D, moSIFT, etc.) together with an adaptive frame pooling paradigm.

PROFESSIONAL SKILLS

Programming Languages and Tools: Python, Java, Docker, MATLAB, C/C++, Delphi, Latex

Deep Learning Toolkits: PyTorch, Tensorflow, Caffe, MatConvNet

AWARDS

- Carnegie Mellon University LTI Fellowship Aug 2017
- ACM-ICPC Sichuan Provincial Programming Contest, Silver Medal Jun 2015
- Mathematical Contest in Modeling, Honorable Mention Mar 2015
- Mathematical National Olympiad in Informatics in Provinces (NOIP) 2008, First Class Prize Oct 2008

[CV compiled on 2018-06-07 for Research]