SHUQIN XIE

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Department of Automation ◇ Shanghai Jiao Tong University

EDUCATION

Shanghai Jiao Tong University, China *Sep, 2015 - Jun, 2019*
School of Electronic Information and Electrical Engineering *(expected)*
Bachelor of Engineering in Automation
GPA: 87.31 / 100

PUBLICATIONS

RMPE: Regional Multi-Person Pose Estimation
Hao-Shu Fang, **Shuqin Xie**, Yu-Wing Tai and Cewu Lu
In Proceedings of *International Conference on Computer Vision* (ICCV), 2017

Environment Upgrade Reinforcement Learning for Non-differentiable Multi-stage Pipelines
Shuqin Xie, Zitian Chen, Chao Xu and Cewu Lu
In Proceedings of *Conference on Computer Vision and Pattern Recognition* (CVPR), 2018 (**Spotlight**)

TOPNet: Thinking Outside the Bounding Box
Shuqin Xie, Chao Xu, Shu Liu, Alan Yuille and Jiaya Jia
Submission to *International Conference on Computer Vision* (ICCV), 2019, *under review*

Post-NMS Training Strategy for Object Detection
Shuqin Xie*, Lu Qi*, Shu Liu, Xiaoyong Shen and Jiaya Jia
Submission to *Conference on Neural Information Processing Systems* (NeurIPS), 2019, *under review*

RESEARCH EXPERIENCE

Computer Vision Group at The Chinese University of Hong Kong
Research Assistant *March, 2018 - Feb, 2019*

- Advisor: Prof. Jiaya Jia
- **Instance Segmentation**
  Proposed an attention module to address the challenging occlusion problem, which can be augmented into existing proposal-based methods to obtain substantial improvement over the occlusion cases. Improved state-of-the-art algorithms on instance segmentation and multi-person pose estimation.

Computational Cognition, Vision, and Learning at Johns Hopkins University
Visiting Undergraduate Research Intern *Jun, 2017 - Sep, 2017*

- Advisor: Prof. Alan Yuille
- **Pose Estimation Under Occlusion**
  Proposed a two-phrase algorithm for human pose estimation, which is more suitable for pose estimation under extreme occlusions. Decomposed the problem into two subtasks, making the training target more reasonable for different stages in a network. Improved previous state-of-the-art by 2 PCKh.

Machine Vision and Intelligence Group at Shanghai Jiao Tong University
Research Assistant *Aug, 2016 - Jan, 2018*

- Advisor: Prof. Cewu Lu

- **Multi Person Pose Estimation**
  Developed a general proposal-based framework for multi-person pose estimation. Proposed several key components to improve the robustness of single person pose estimation algorithm given inaccurate bounding box detection. Achieved state-of-the-art performance in the MPII dataset.
- **Deep Reinforcement Learning for Multi-stage Pipeline**
  Developed a framework to improve the overall recognition performance for non-differentiable multi-stage pipelines, enabling information to feed back from downstream to upstream. Substantially improved the state-of-the-art in multi-person pose estimation.

PROJECTS

Regional Multi-person Pose Estimation
Open-source to facilitate further research *Dec, 2016*

- Developed a two-stage framework for multi-person pose estimation. Proposed the Symmetric Spatial Transformer Network (SSTN) module and the Pose level NMS algorithm, as well as devised the early version of Pose Guided Proposal Generator (PGPG). Achieved 76.8 mAP on the challenging MPII dataset.

Jigsaw Puzzle Player
AU326 *Fundamentals of Digital Image Processing,* **99/100** *Jan, 2017*

- Designed and implemented a program that automatically played jigsaw puzzle and passed all games in the given environment. Played up to 8×8 jigsaw puzzle.

Maze robot
EI315*, Science and Technology Innovation (Part 3-F),* **93/100** *May, 2017*

- Implemented a program in Visual Studio (C++) that controlled a robot to drive through a maze. Further developed a program with a bluetooth module to allow people draw a trajectory on a laptop and control the robot to follow the trajectory.

SELECTED AWARDS

Academic Excellence Scholarship (**Class A**) of SJTU, (**Top 5%**) *2016*
Qingyang Jin Scholarship of Shanghai Jiao Tong Univ, *2016*
3st Prize at the National Mathematical Olympiads of China *2013*

PROGRAMMING SKILLS

Programming Languages: C/C++, Python, Lua, MATLAB, Java
Professional Tools: Torch, PyTorch, Tensorflow, Caffe, LaTeX

INTERESTS AND ACTIVITIES

Swimming and jogging
Volunteered as a young teacher for one month in Maqu town, Gansu Province.