Li Wang

PhD Candidate · Computer Vision

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Summary

A PhD candidate on Computer Vision and Computer Graphics at National Centre for Computer Animation, Bournemouth University, UK. My research focuses on image/video based neural style transfer, in particular, photographic style transfer and coherent video style transfer for arbitrary artistic styles using deep learning techniques. I received my M.Eng and B.Sci degrees from Department of Computer Science at Jilin University China in 2016 and 2013, respectively. Then I got a 4-year PhD scholarship from Bournemouth University and China Scholarship Council.

Work Experience

Sensor ID

Campobasso, Italy

Software Engineer — *Sep. 2019 - Oct. 2019*

- Developed a software for real-time monitoring and recording sensor data. The software is developed in python (e.g., tkinter, and matplotlib) but transformed into a single .EXE file without any python dependencies.

ITware

Budapest, Hungary

Consultant on AI techniques — *Aug. 2019 - Sep. 2019*

- Gave representations about Recommendation System (RS) in Machine Learning and Deep Learning area.
- Helped to design a potential customized deployment of RS for European iGame Project.

IBM(China) Ltd

Beijing, China

INTERN R&D Programmer — *Jan. 2013 - May. 2013*

- Developer for an intranet office product and dealt with product bugs.
- Built various Windows/Linux systems for teammates to test product performance on different OS platforms.

Projects

OPEN SOURCE CODE for Energy Expenditure through two inertial sensors

Malaga, Spain

Research & software development — *Oct. 2019 - Feb 2020*

- Research problems & motivation: 1. It's difficult to reproduce energy expenditure estimation for human physical activities proposed in related researches; 2. Enclosed commercial software is way too expensive for clinical practises.
- Solutions: 1. Describe a clear procedure of physical activity monitoring and data analysis (including hardware settings like chip models and total information of participants); 2. Develop a complete open-source code of calculating Energy Expenditure for physical activities based on low-cost inertial sensors.

Bas-relief Modelling from Enriched Detail and Geometry with Deep Normal Transfer

Bournemouth, UK

Research — *Jun. 2018 - Jan 2020*

- Motivation: artistic creation of geometry details on digital bas-reliefs should be more enriched and preserved well under various situations like over-compression and curved surfaces.
- Methodology: 1. propose a semantic neural normal transfer to enrich the details; 2. propose a normal decomposition to enhance the geometry preservation by for digital bas-reliefs.
- Result: our approach beats the SOTA methods by producing more vivid geometry details and better geometry preservation.

Coherent Video Style Transfer for Arbitrary Artistic Styles

Bournemouth, UK

Research — *Nov. 2017 - Aug 2019*

- Research problem: 1. style transformation is sensitive to small variants (e.g., lighting, noises and motions) among video frames, which causes flickering problem. 2. ghosting artefacts and blurriness artefacts need to be fixed; 3. no single network for arbitrary artistic styles.
- Methodology: 1. choose more stable optimisation-based approach as baseline network, which is naturally made for arbitrary styles; 2. propose mask techniques for preventing ghosting artefacts and sharpness loss for preventing blurriness artefacts.
- Result: our approach beats the SOTA methods by qualitative and quantitative evaluation on both popular MPI Sintel and Davis 2017 datasets.

Fast Photographic Style Transfer

Bournemouth, UK

Research — *Apr. 2017*

- Research problem: distortion occurs on both content reconstruction and style transformation stage.
- Methodology: 1. propose two streams CNN models for separate content reconstruction and style transformation; 2. propose similarity loss to enhance the distribution matching between content image and reference image; 3.To speed up the transfer process, we integrate similarity loss into feed-forward networks.
- Result: 1. we beat a cvpr SOTA method on qualitative evaluation and user study; 2. our approach eventually speedups the transformation process over 100 times.

Honors & Awards

Domestic

2016	**China Council Scholarship**, Department of Education, China	*Beijing, China*
2015	**Huawei Scholarship**, Jilin University	*Changchun, China*
2015	**National Postgraduate Scholarship**, Jilin University	*Changchun, China*
2010-2012	**National Encouragement Scholarship**, Jilin University	*Changchun, China*

Education

National Centre for Computer Animation, Bournemouth University — *Bournemouth, UK*

PhD in Computer Science — *Sep. 2016 - present*

Department of Computer Science and Technique, Jilin University — *Changchun, China*

M.E. and B.S. in Computer Science and Engineering — *Sep. 2009 - Jun. 2016*

Selected publications

OPEN SOURCE CODE for Energy Expenditure through two inertial sensors — *Malaga, Spain*

Wang, L*, Martín-Martín J.*, De-Torres I., Escriche-Escuder A, Gonzalez-Sanchez M., Muro-Culebras A., Roldán-Jiménez C., Ruiz-Munõz M., Mayoral-Cleries F., Biró A., Tang W., Nikolova B., Salvatore A., Cueta-Bargas A.I. — *Feb. 2020*

- * indicates equal contribution. under review. submitted to Journal of Applied Physiology

Bas-relief Modelling from Enriched Detail and Geometry with Deep Normal Transfer — *Bournemouth, UK*

Meili Wang*, **Li Wang***, Tao Jiang, Nan Xiang, Mingqiang Wei, Xiaosong Yang, Taku Komura, Jianjun Zhang — *Jan. 2020*

- * indicates equal contribution. under review. submitted to Neuralcomputing.

Fast Coherent Video Style Transfer — *Bournemouth, UK*

Li Wang, Xiaosong Yang, Weidong Min, Jianjun Zhang — *Aug. 2019*

- under review. submitted to IEEE transactions on Multimedia.

Fast photographic style transfer based on convolutional neural networks — *Bintan, Indonesia*

Li Wang, Nan Xiang, Xiaosong Yang, Jianjun Zhang — *Jun. 2018*

- Proceedings of CGI 2018.

Photographic Style Transfer — *Bournemouth, UK*

Li Wang, Zhao Wang, Xiaosong Yang, Shi-Min Hu, Jianjun Zhang — *Nov. 2018*

- The Visual Computer.

Single-image Mesh Reconstruction and Pose Estimation via Generative Normal Map — *Paris, France*

Nan Xiang, **Li Wang**, Tao Jiang, Yanran Li, Xiaosong Yang, Jianjun Zhang — *Jul. 2019*

- Proceedings of CASA 2019.

Personal Skills & Hobbies

since 2009 **Ubuntu/Windows**, Python, C/C++, Matlab, Torch/PyTorch	*Computer Skills*
since 2013 **Badminton**, Speed skating	*Hobbies*