Zhijie **Wu**

Undergraduate student · Deep Learning

(+86)18782070071 | wzj.micker@gmail.com | https://zhijiew94.github.io/

Education

Department of Computer Science, Sichuan University — *Chengdu, China*

B.S. in Computer Science and Engineering — *Aug. 2012 - July. 2016*

- Overall GPA: 90.74/100. Major GPA: 92.6/100. Ranking: 2/360. National Scholarship Award.
- English Proficiency: GRE: 160(V)+169(Q)+3.5, TOEFL: 29(L)+26(R)+26(S)+29(W)=110

Publication

(* represents joint first authors)

Arbitrary Style Transfer via Completeness and Coherence Alignment — *submitted to CVPR 2021*

Zhijie Wu*, Chunjin Song*, Sheng Guo, Matthew R. Scott, Weilin Huang

- We introduce the concept of Completeness and Coherence to style transfer by imposing these two objectives and jointly analyzing them.
- We present a new framework (CCNet) and an objective function (cc-loss) to verify the effectiveness of completeness and coherence.
- Our cc-loss enables balances between completeness and coherence by adjusting their weights during training.

EFANet: Exchangeable Feature Alignment Network for Arbitrary Style Transfer — *Accepted by AAAI 2020*

Zhijie Wu*, Chunjin Song*, Yang Zhou, Minglun Gong, Hui Huang

- We highlight the importance of exchangeable styles by explicitly aligning style features between two images.
- We design a novel Feature Exchange Block as well as a constraint loss function to learn common information in-between style features.
- A novel *whitening operation* is also developed to better combine content and style features.

ETNet: Error Transition Network for Arbitrary Style Transfer — *Accepted by NeurIPS 2019*

Zhijie Wu*, Chunjin Song*, Yang Zhou, Minglun Gong, Hui Huang

- We introduce the concept of error-correction mechanism and error diffusion operation to arbitrary style transfer by evaluating errors in stylization results and correcting them iteratively.
- By explicitly computing error features for perceptual loss in a feed-forward network, each refinement is formulated as an error diffusion process.
- The overall style transfer framework can perform arbitrary style transfer and synthesize highly detailed results with favored styles.

Structure-aware Generative Network for 3D-Shape Modeling — *Accepted by ACM SIGGRAPH 2019*

Zhijie Wu, XIANG WANG, DI LIN, DANI LISCHINSKI, DANIEL COHEN-OR, HUI HUANG

- We propose a new end-to-end generative framework by jointly considering the geometry and structure of 3D shapes.
- The joint analysis strategy enables tasks of shape completion and geometry-structure translation.
- Some specific shapes are designed to evaluate capability of each model in capturing the dependency between geometry and structure.

Working Experience

Malong Technologies — *Shenzhen, China*

Research Intern — *Dec. 2019 - Jul. 2020*

- Introduce the concept of completeness and coherence to style transfer. The work has been submitted to CVPR 2021.
- Propose a new framework (CCNet) and a novel objective (cc-loss) to explicitly capture these two constraints so that the full sets of input styles and fine-grained texture details can be well preserved simultaneously.

Visual Computing Center, Shenzhen University — *Shenzhen, China*

Research Assistant — *Jul. 2017 - Sep. 2019*

- Develop a new generative method to jointly analyze the geometry and structure of 3D shapes, which had been accepted by SIGGRAPH 2019.
- Publish two papers about arbitrary style transfer on NeurIPS 2019 and AAAI 2020. One paper aims to extract exchangeable styles for better matched content structures while the other model corrects wrong styles in an iterative manner to advance its generalization ability.

Human computer interaction research center, SIAT — *Shenzhen, China*

Research Assistant — *Jan. 2017 - March. 2017*

- Based on the idea of Matrix Low-Rank, develop a new method to compute the correlation of mesh patches.
- Then use patch normals to process the mesh vertex coordinates so that mesh texture can be smoothed.

Software Group,DJ-Innovations — *Shenzhen, China*

Software Developer — *Dec. 2015 - Dec. 2016*

- Develop and deploy mobile applications to control DJI's drones, including designing user interfaces and implementing file systems.
- Take part in the testing and deployment of DJI's new hardware products.

Honors & Awards

2019	**NeurIPS Travel Award**, Finacial support for NeurIPS authors	*Vancouver, Canada*
2016	**Outstanding Final-Year Project**, Top 3% student in Computer Science Department	*Chengdu, China*
2014	**National Scholarship**, Top 3% student in Computer Science Department	*Chengdu, China*

Skills & Services

Professional activities	Reviewers of SIGGRAPH ASIA 2019, ACM TOG, IEEE TPAMI
Programming	Python, C/C++, Objective-C, PHP, HTML5, Javascript
Framework	Tensorflow, Qt
Other tools	LaTeX, Git