

# WANCHAO SU

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I am a researcher specializing in interactive visual computing and AI-assisted design, with a focus on the intersections of Human-Computer Interaction (HCI), Computer Graphics (CG), and Artificial Intelligence (AI). My research aims to integrate advanced AI techniques into visual content creation, supporting creators with intuitive, intelligent tools that enhance user experience across diverse media. Through interdisciplinary collaboration, I have developed systems that empower designers in areas including interactive storytelling, virtual and augmented reality, user interface design, and digital content creation. My work emphasizes transdisciplinary design approaches, bridging technological innovation with human-centered creative practice, and aligns with applications in service innovation, social design, and interactive system design. I have published in leading venues such as **ACM Transactions on Graphics**, **IEEE Transactions on Visualization and Computer Graphics**, and **ACM SIGGRAPH/SIGGRAPH Asia**, and my research has been recognized with awards including a silver medal at the **Inventions Geneva Evaluation Days**, as a **Hybrid Award Finalist**, the **Lumen Prize** and coverage in **New Scientist**. I aim to advance the practice and pedagogy of design through AI-enabled tools and intelligent systems that enrich both professional and educational creative environments.

## EDUCATION

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- 2016.09-2021.08    **Doctor of Philosophy in Creative Media**, City University of Hong Kong, Hong Kong SAR.  
    > Qualifying Panel : Prof. Hongbo Fu, Prof. Miu-Ling Lam, Prof. Antoni B. Chan  
    > Thesis : Sketch-Based Image Synthesis with Deep Generative Networks  
    > Supervisor : Prof. Hongbo Fu
- 2012.09-2016.06    **Bachelor in Information Management and Systems**, Dalian University of Technology, China.  
    > Supervisor : Dr. Xuelong Chen

## EXPERIENCE

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- 2023.09-Now    **Research Fellow**, Monash University, Australia.  
    > Faculty of Information Technology  
    > Department of Human Centred Computing  
    > SensiLab
- 2022.01-2023.08    **Postdoctoral Researcher**, City University of Hong Kong, Hong Kong SAR.  
    > Department of Computer Science  
    > Advisor : Prof. Jing Liao
- 2020.10-2021.12    **Research Assistant**, City University of Hong Kong, Hong Kong SAR.  
    > School of Creative Media  
    > Advisor : Prof. Hongbo Fu
- 2020.02-2020.07    **Visiting Student**, Tsinghua University, China.  
    > Department of Computer Science and Technology
- 2019.11-2020.01    **Research Intern**, Chinese Academy of Sciences, China.  
    > Institute of Computing Technology  
    > Advisor : Prof. Lin Gao

## PUBLICATIONS

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- Book Chapter    Victor Calixto, Camilo Cruz Gambardella, Darcy Zelenko, **Wanchao Su** and Duncan Maxwell. **Mapping Emerging Machine Learning Methodologies in Architectural Design : A Pathway for Present Integration and Future Research**. (Chapter 9 in **AI-Aided Design for Sustainability**, Springer, in press).

- SIGGRAPH Asia 25 Xin Wang, Di Lin, **Wanchao Su**<sup>†</sup> (joint corresponding author), Ji Du, Renjie Zhang, Jie Zhang, Haotian Dong, Ke Xu, Qing Guo and Ping Li<sup>†</sup>. **HRC-Net : Learning Visual Hypothesis, Representative, and Collaboration for Multi-Domain Image Inpainting**. (Conditionally accepted by SIGGRAPH Asia 2025, Journal Track).
- SIGGRAPH Asia 25 Ronghuan Wu, **Wanchao Su** and Jing Liao. **LayerPeeler : Autoregressive Peeling for Layer-wise Image Vectorization**. (Conditionally accepted by SIGGRAPH Asia 2025, Conference Track).
- ISMIR 25 Meng Yang, Jon McCormack, Maria Teresa Llano and **Wanchao Su**<sup>†</sup> (corresponding author). **Exploring the Feasibility of LLMs for Automated Music Emotion Annotation**. Accepted by The 26th conference of the International Society for Music Information Retrieval (ISMIR 25).
- CVPR 25 Ronghuan Wu, **Wanchao Su** and Jing Liao. **Chat2SVG : Vector Graphics Generation with Large Language Model and Image Diffusion Model**. Proceedings of the Computer Vision and Pattern Recognition Conference (CVPR 25), pp. 23690-23700.
- IJCV 25 Ronghuan Wu, **Wanchao Su**, Kede Ma and Jing Liao. **AniClipart : Clipart Animation from Text-to-Video Priors**. International Journal of Computer Vision, 133, 3149–3165 (2025). <https://doi.org/10.1007/s11263-024-02306-1>.
- ICPR 24 Jintu Zheng, Yun Liang, Yuqing Zhang and **Wanchao Su**. **Memory Matching is not Enough : Jointly Improving Memory Matching and Decoding for Video Object Segmentation**. In International Conference on Pattern Recognition, pp. 188-203. Cham : Springer Nature Switzerland, 2024.
- TVCG 24 **Wanchao Su**, Can Wang, Chen Liu, Fangzhou Han, Hongbo Fu and Jing Liao. **StyleRetoucher : Portrait Image Retouching with GAN Priors**. IEEE Transactions on Visualization and Computer Graphics, doi : 10.1109/TVCG.2024.3432910.
- SIGGRAPH Asia 23 Ronghuan Wu, **Wanchao Su**, Kede Ma, Jing Liao. **IconShop : Text-Guided Vector Icon Synthesis with Autoregressive Transformers**. ACM Transactions on Graphics (TOG), 42(6), 14 pages.
- SIGGRAPH Aisa 22 Chufeng Xiao\*, **Wanchao Su**\* (joint first author), Jing Liao, Zhouhui Lian, Yi-Zhe Song, and Hongbo Fu. 2022. **DifferSketching : How Differently Do People Sketch 3D Objects?**. ACM Transactions on Graphics (TOG). 2022, 41(6), 16 pages.
- TVCG 22 **Wanchao Su**, Hui Ye, Shu-Yu Chen, Lin Gao, and Hongbo Fu. 2022. **DrawingInStyles : Portrait Image Generation and Editing with Spatially Conditioned StyleGAN**. IEEE Transactions on Visualization and Computer Graphics, doi : 10.1109/TVCG.2022.3178734.
- SIGGRAPH 20 Shu-Yu Chen\*, **Wanchao Su**\* (joint first author), Lin Gao, Shihong Xia, and Hongbo Fu. 2020. **DeepFaceDrawing : Deep Generation of Face Images from Sketches**. ACM Transactions on Graphics (TOG). 2020 Jul 8; 39(4) : 72-1.
- SIGGRAPH 20 Hui Ye\*, Kin Chung Kwan\*, **Wanchao Su**, and Hongbo Fu. 2020. **ARAnimator : In-situ Character Animation in Mobile AR with User-defined Motion Gestures**. ACM Transactions on Graphics (TOG). 2020 Jul 8; 39(4) : 83-1.
- i3D 18 **Wanchao Su**, Dong Du, Xin Yang, Shizhe Zhou, and Hongbo Fu. 2018. **Interactive Sketch-Based Normal Map Generation with Deep Neural Networks**. Proceedings of the ACM on Computer Graphics and Interactive Techniques. 2018 Jul 25; 1(1) : 1-17.
- SIGGRAPH Aisa 17 **Wanchao Su**, Xin Yang, and Hongbo Fu. 2020. **Sketch2Normal : Deep Networks for Normal Map Generation**. In SIGGRAPH Asia 2017 Posters (SA '17), Article 34, 1–2. <https://doi.org/10.1145/3145690.3145744>
- CAVW 17 Xin Yang, **Wanchao Su**, Jian Deng, Xiaogang Jin, Guozhen Tan, and Zhigeng Pan. 2017. **Real-Virtual Fusion Model for Traffic Animation**. Computer Animation and Virtual Worlds. 2017 Nov, 28(6) : e1740.
- MTA 16 Xin Yang, Shuai Li, Yong Zhang, **Wanchao Su**, Mingyue Zhang, Guozhen Tan, Qiang Zhang, Dongsheng Zhou, Xiaopeng Wei. 2016. **Interactive Traffic Simulation Model with Learned Local Parameters**. Multi-media Tools and Applications. 2016 Apr 1; 76(7) : 9503-16.

- VRCAI 15 Xin Yang, **Wanchao Su**, Jian Deng and Zhigeng Pan. 2015. **Real Traffic Data-Driven Animation Simulation**. In Proceedings of the 14th ACM SIGGRAPH International Conference on Virtual Reality Continuum and its Applications in Industry 2015 Oct 30 (pp. 93-99).

## TEACHING EXPERIENCES

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- FIT1059 **Artificial Intelligence for Everyone**, Second Semester 2025, Monash University.
- SQ0391001H **AI-Assisted Content Generation for Visual Design**, Summer Term 2025, Shandong University.
- CS1103 **Introduction to Media Computing**, Teaching Assistant, 2017/18 Semester A, CityU.
- SM4701 **Graduation Thesis/Project**, Teaching Assistant, 2017/18 Semester B, CityU.
- SM2716 **Physical Computing and Tangible Media**, Teaching Assistant, 2018/19 Semester B, CityU.

## EXHIBITION

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- 2025 Ziwei Wu, Hankun Yu, Yiyang Lu and **Wanchao Su**. Installation Art Work '**Mimicry : News Ecosystem**', Bable Bottle : Pragmatic, Creation and Form of Life in the Age of Artificial Intelligence, Hangzhou Center, Hangzhou, China.
- 2025 Ziwei Wu, Xiyu Tian and **Wanchao Su**. Printed Art Work '**Mimicry : Evolution Through Diverse Perspectives**', The Digital Wild, Yuexiu-iPark GZ-HK Intelligent Valley, Guangzhou, China.
- 2025 Ziwei Wu, Xiyu Tian and **Wanchao Su**. Interactive Media Art Work '**Mimicry : Mimetic on Simulacra**', The Digital Wild, Yuexiu-iPark GZ-HK Intelligent Valley, Guangzhou, China.
- 2025 Ziwei Wu, Xiyu Tian and **Wanchao Su**. Installation Media Art Work Series '**Mimicry**', The Digital Wild, B1, Shenzhen T33 Tower, Shenzhen, China.
- 2024 Ziwei Wu and **Wanchao Su**. Installation Media Art Work '**Mimicry**', Altering Nature : Exploring Life in Computational Art, Ping Yuan and Kinmay W Tang Gallery, Hong Kong University of Science and Technology Library, Hong Kong SAR.

## HONORS & AWARDS

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- 2025 **Hybrid Award Finalists**. The Lumen Prize, 2025.
- 2022 **Silver Medal**. Inventions Geneva Evaluation Days (IGED) 2022.
- 2022 **Open-source Graphics Software Award**. CAD & CG, CCF.
- 2021 **SIGGRAPH Thesis Fast Forward 2021**, SIGGRAPH Research Career Development Committee.
- 2020 **Runner-Up for the Open-Source Software Award**. CAD & CG, CCF.
- 2018 **Research Tuition Scholarship 2018/19**. City University of Hong Kong.
- 2015 **Best Paper Award (Second Place)**. VRCAI.

## PROFESSIONAL TALKS

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- 2024.10 **StyleRetoucher : Generalized Portrait Image Retouching with GAN Priors**, Pacific Graphics 2024 Invited Talk, Huangshan, China.
- 2020.08 **DeepFaceDrawing : Deep Generation of Face Images from Sketches**, SIGGRAPH 2020, Virtual.
- 2020.08 **ARAnimator : In-Situ Character Animation in Mobile AR with User-Defined Motion Gestures**, SIGGRAPH 2020, Virtual.
- 2018.05 **Interactive Sketch-Based NormalMap Generation with Deep Neural Networks**, i3D 2018, Montreal, Canada.

## ACADEMIC SERVICE

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- Organizer Web Chair for International Conference on Extended Reality (**ICXR**) 2025.
- PC Member **SIGGRAPH Asia** 2025, 2026.
- Pacific Graphics (**PG**) 2024, 2025.
- Expressive Symposium 2025.
- International Conference on Computational Visual Media (**CVM**) 2025.
- Computer Graphics International (**CGI**) 2023 and 2024.
- Reviewer **SIGGRAPH/SIGGRAPH Asia**.
- IEEE Transactions on Visualization and Computer Graphics (**TVCG**).
- Conference on Human Factors in Computing Systems (**CHI**).
- ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (**CSCW**).
- Annual Conference of the European Association for Computer Graphics (**Eurographics, EG**).
- Pacific Conference on Computer Graphics and Applications (**PG**).
- Computer Graphics Forum (**CGF**)
- IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**).
- Computers & Graphics (**C&G**).
- ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**).