Chuan Yan

Creativity and Graphics Lab (CraGL)
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Education

2018-2024 George Mason University, USA

Ph.D. in Computer Science
Thesis: Human-centered AI-driven Digital Painting
Advisor: Yotam Gingold

2011-2018 Southwest Jiaotong University, China

Ph.D. Student in Computer Science
Thesis: Digital video and image coding and transmission
Advisor: Qiang Peng

2007-2011 Independent Study and Graduate Entrance Exam Preparation, China

2003-2007 Southwest Jiaotong University, China

B.S. in Communication Engineering

Research Interests

My research interests lie at the intersection of Computer Graphics, Computer Vision, Deep Learning, and Human-Computer Interaction. Specifically, I focus on the algorithm and interaction design for AI-driven digital painting methods. I have investigated sketch cleanup and vectorization, aiming to propose a new perspective on how humans understand sketches. Additionally, I also explored sketch colorization and shading which seeks to enhance professional workflow efficiency while providing maximum freedom for creative expression. Moving forward, I plan to expand my research to include design-based human vision. I am particularly interested in design processing, generation, and other graphic or vision tasks within the vector image domain. I believe this work will contribute to fundamental research in human visual abstraction, creativity, and expressivity.

Publications

- **Chuan Yan**, Yong Li, Deepali Aneja, Matthew Fisher, Edgar Simo-Serra, Yotam Gingold. *Deep Sketch Vectorization via Implicit Surface Extraction*. SIGGRAPH 2024 (🏆 top venue).

- Amrita Ganguly*, **Chuan Yan***, John Joon Young Chung, Tong Steven Sun, Yoon Kiheon, Yotam Gingold, Sungsoo Ray Hong. *Stage-by-stage and Step-by-step: Designing Human-AI Collaborative Support for Professionals' Comic Shadowing*. UIST 2024 (under review).

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*equal contribution

- **Chuan Yan**, John Joon Young Chung, Yoon Kiheon, Yotam Gingold, Eytan Adar, Sungsoo Ray Hong. *FlatMagic: Improving Webcomic Flat Colorization through AI-driven Design for Professionals* . SIGCHI 2022 (🏆 top venue).

- **Chuan Yan**, David Vanderhaeghe, Yotam Gingold. *A Benchmark for Sketch Cleanup.* ACM Transactions on Graphics (TOG), SIGGRAPH Asia 2020 special issue (🏆 top venue).

- Qing Li, Qiang Peng, Junzhou Chen, **Chuan Yan**. *Improving Image Classification Accuracy With ELM and CSIFT.* Computing in Science and Engineering 21(5): 26-34 (2019)

- Chongyang Xiang, Jiajun Xu, **Chuan Yan**, Qiang Peng, Xiao Wu. *Generative Adversarial Networks Based Error Concealment for Low Resolution Video.* ICASSP 2019: 1827-1831

- Qing Li, Qiang Peng, **Chuan Yan**. *Multiple VLAD Encoding of CNNs for Image Classification.* Computing in Science and Engineering 20(2): 52-63 (2018)

- Jiajun Xu, Wei Jiang, **Chuan Yan**, Qiang Peng, Xiao Wu. *A Novel Weighted Boundary Matching Error Concealment Schema for HEVC.* ICIP 2018: 3294-3298

Employment History

Sep 2022– **Jun 2024**	George Mason University *Graduate Teaching Assistant*
Jun 2022– **Aug 2022**	Adobe *Research Scientist Internship*
Sep 2020– **Jun 2022**	George Mason University *Graduate Teaching Assistant*
Sep 2019– **Sep 2020**	George Mason University *Graduate Research Assistant*
Sep 2018– **Jun 2019**	George Mason University *Graduate Teaching Assistant*

Programming Skills

- **Programming Languages**

  Python (PyTorch, TensorFlow, Scikit-learn, SVGpathtools, OpenCV)
  C++
  C#, (Unity)

- **Web Development**

  HTML5, JavaScript/jQuery