

Xu Yao

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Ph.D. in Computer Vision with 5+ years of research and industry experience in face editing, video editing, and generative modeling. Experienced in leading research projects, mentoring junior researchers, and developing innovative solutions to real-world challenges.

Education

Telecom Paris , Polytechnic Institute of Paris, France Ph.D. in Computer Vision - Thesis: Latent Representations for Facial Image and Video Editing - Advisor: Yann Gousseau , Alasdair Newson , Pierre Hellier and Gilles Puy	Nov 2018 - Apr 2022
Mines Paris , France M.Sc. in Applied Mathematics	Sep 2015 - Jul 2018
Fudan University , China B.Sc. in Theoretical and Applied Mechanics (Major) & Economics (Minor)	Sep 2011 - Jul 2015

Experience

Flawless AI , Santa Monica, US Senior Research Scientist Mar 2025 - Present Research Scientist Jan 2023 - Mar 2025 - Developed a 3D Gaussian Splatting-based face tracker for beard tracking, including curating a diverse beard dataset, training a generalized tracker and performing end-to-end model evaluation in production. - Redesigned the 3D face neural renderer, reducing model size from 500M to 120M parameters while improving rendering quality. Led the development of an occlusion-aware neural rendering method, improving model robustness in real-world production environments. - Supervised an intern project that introduced a zero-shot video deraining approach, leveraging large video diffusion models and negative prompt based editing to effectively remove real-world rain without fine-tuning. - Developed a multi-task diffusion model enabling precise user-controlled editing for tasks including motion blur generation, colorization, sharpening, and film grain synthesis.	Jan 2023 - Present
Entrepreneur First , Paris, France Founder in residence - EFPA8 - Participated in a prestigious entrepreneurship program. Explored innovative ideas in 3D modeling and virtual fitting technology, conducting extensive market research and developing proofs of concept.	Mar 2022 - Aug 2022
InterDigital (Technicolor) , Rennes, France Researcher <i>Conducted research as part of the InterDigital research lab in collaboration with Technicolor Creative Studio during Ph.D. studies, contributing to projects aimed at high-quality facial attribute editing in 4K movies.</i> - Proposed an encoder for high-fidelity StyleGAN inversion, achieving more accurate and stable facial attribute editing in images and videos [ECCV paper] [Code]. - Proposed a face editing algorithm leveraging StyleGAN latent space for disentangled facial attribute editing and designed the first video manipulation pipeline for face editing in high-resolution videos [ICCV paper] [Code]. - Developed the first face aging/de-aging approach for high resolution images, outperforming state-of-the-art.	Nov 2018 - Feb 2022

Horizon Robotics, Beijing, China

Jul 2018 – Oct 2018

Research Intern

- Explored multi-modal method for voice separation based on sound and images, literature review on speech separation and lip reading, implement the state-of-the-art algorithm and achieve two-person speech separation.

Technicolor, Rennes, France

Jan 2018 – Jun 2018

Research Intern (Supervisor: Patrick Pérez and Gilles Puy)

- Proposed a novel approach for photo-realistic style transfer. We use only two photos to train a U-Net and the pre-trained network can transfer the learned style on photos not viewed at training time.

Selected Publications

- J. Gonzalez, **X. Yao**, A. Whelan, K. Olszewski, H. Kim, P. Garrido, “VideoSPatS: Video Spatiotemporal Splines for Disentangled Occlusion, Appearance and Motion Modeling and Editing”, *CVPR* 2025
- **X. Yao**, A. Newson, Y. Gousseau, P. Hellier, “A Style-Based GAN Encoder for High-Fidelity Reconstruction of Images and Videos”, *European Conference on Computer Vision (ECCV)*, 2022.
- **X. Yao**, A. Newson, Y. Gousseau, and P. Hellier, “A latent transformer for disentangled face editing in images and videos”, *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2021.
- **X. Yao**, G. Puy, A. Newson, Y. Gousseau, P. Hellier, “High-Resolution Face Age Editing”, *2020 25th International Conference on Pattern Recognition (ICPR)*, IEEE, 2021.
- Patent: P. Hellier, M. Shukor, B. B. Damodaran, and **X. Yao**, “Methods and apparatuses for encoding/decoding an image or a video”, *Worldwide Patent WO2022268641A1*, 2022

Full list available on [Google Scholar](#)

Skills

- **Programming:** Python, PyTorch, TensorFlow, OpenCV, FFmpeg, Docker
- **Research Expertise:** Deep Learning, Generative Modeling, Diffusion Models, GANs, Neural Rendering, 3D Modeling, 3D Gaussian Splatting, Image and Video Synthesis, Latent Space Manipulation, Style Transfer

Languages

- **English:** Full professional proficiency
- **French:** Full professional proficiency
- **Mandarin:** Native speaker