Tianhao Chen

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Education

- **Swiss Federal Institute of Technology, Zurich (ETH Zurich)** Switzerland
  Ph.D. in Computer Science *Jul. 2026 - Present*
  - Joint doctoral program with DisneyResearch|Studios; advised by Prof. Dr. Markus Gross, Computer Graphics Lab.
- **Swiss Federal Institute of Technology, Zurich (ETH Zurich)** Switzerland
  Master of Science in Computer Science; with Distinction; GPA: 5.83/6 *Sept. 2023 - Apr. 2026*
- **The Chinese University of Hong Kong (CUHK)** Hong Kong
  Bachelor in Computer Science; First Class Honors; GPA: 3.76/4 (Top 15%) *Aug. 2018 - Jul. 2022*
  - **Honors & Awards:** Dean's List (3 years), ELITE Stream Scholarships, Admission Scholarship (70,000 HKD per year)

Publications

- **Tianhao Chen**, Clara Fernandez, Marteinn Oskarsson, Chuck Tappan, Olga Sorkine-Hornung, Markus Gross, Christopher Schroers, Abdelaziz Djelouah. "2D Gaussian Splatting for Bézier Spline Line Art Vectorization". *ACM SIGGRAPH 2026.*

Research Interests

- Computer Vision; Computer Graphics; 3D Reconstruction; Deep Learning

Research Experience

- **Vectorizing Line Art Animations via Gaussian Splatting | Master's Thesis & Internship** Zurich, Switzerland
  Supervised by Dr. Clara Fernandez and Dr. Abdelaziz Djelouah;
  Overseen by Prof. Dr. Markus Gross, DisneyResearch|Studios & ETH Zurich *Feb. 2025 - Apr. 2026*
  - Proposed a unified Gaussian Splatting–based framework for vectorizing both static and animated line art; published as a first-author paper at **ACM SIGGRAPH 2026**.
  - Outperformed prior line art vectorization methods on both clean and textured drawings.
  - Achieved temporally consistent stroke tracking across up to 100-frame animation sequences.
- **Scene-aware Human Motion Reconstruction | Semester Project** Zurich, Switzerland
  Supervised by Siwei Zhang; Overseen by Prof. Dr. Siyu Tang, ETH Zurich *Jun. 2024 - Oct. 2024*
  - Integrated score-based guidance into a diffusion model to enhance the scene-awareness of human motion reconstruction.
  - Designed and benchmarked two types of collision loss functions (scene SDF and COAP occupancy) to compute the guiding gradient.
  - Conducted experiments on the PROX dataset to validate the effectiveness and accuracy of the proposed method.
- **Non-Coding RNA Annotation Using Deep Learning | Research Assistant** Hong Kong
  Supervised by Assistant Prof. Yu Li, CUHK; Funded by Shenzhen Research Institute, CUHK *Jun. 2022 - Aug. 2023*
  - Designed a deep learning network that detects, segments, and classifies non-coding RNA functional regions in full sequences roughly 1,000 times faster than traditional methods.
  - Developed a methodology for identifying previously unknown non-coding RNA families, demonstrating the effectiveness of deep networks under limited data.
- **3D Object Detection Using Point Clouds for Autonomous Driving | Bachelor's Thesis** Hong Kong
  Supervised by Wu Zheng; Overseen by Prof. Chi-Wing Fu, CUHK *Jan. 2021 - May 2022*
  - Enhanced the performance of a 3D object detection model by integrating RGB image segmentation outcomes with point cloud features.
  - Conducted research on knowledge distillation techniques to transfer knowledge from high-modularity detection networks to low-modularity detection networks.
  - Augmented point clouds by fusing multiple frames of the same object with denoising and sampling, increasing mean average precision by 4%.

Skills Summary

- **Programming:** Python, C/C++, CUDA, C#, Shell scripting, Java, SQL
- **Tools:** PyTorch, NumPy, TensorFlow, OpenCV, OpenGL, Git, Docker
- **Languages:** Chinese (Native), English (TOEFL: 105), German (A2)