Kai He

https://www.cs.toronto.edu/~hekai/

Email : hekai@cs.toronto.edu
Mobile : +1 (437) 799-8315

EDUCATION

University of Toronto — Toronto, ON
- *Ph.D. in Computer Science* — *Sept. 2024 – Sept. 2029 (expected)*
  Advisors: Prof. Igor Gilitschenski

ShanghaiTech University — Shanghai, China
- *B.Eng. in Computer Science and Technology* — *Sept. 2020 – July. 2024*
  Advisors: Prof. Jingyi Yu & Prof. Lan Xu

University of California, Berkeley — Berkeley, CA
- *Undergraduate Exchange Student in Computer Science* — *Jan. 2023 – May. 2023*

EXPERIENCE

NVIDIA Toronto AI Lab — Toronto, ON
- *Research Scientist Intern. Advised by Prof. Sanja Fidler & Zian Wang* — *Jan. 2025 - Present*
  - Working on video diffusion models for relighting.

Toronto Intelligent Systems Lab, University of Toronto — Toronto, ON
- *Graduate Research Assistant. Advised by Prof. Igor Gilitschenski* — *Sept. 2024 - Present*
  - Working on taming pre-trained generative models for 4D scene editing.

VRVC, ShanghaiTech University — Shanghai, China
- *Undergraduate Research Assistant. Advised by Prof. Jingyi Yu & Prof. Lan Xu* — *July. 2021 - June. 2024*
  - Designed a garment generation framework with SewingGPT and a Diffusion-based texture generator.
  - Designed an inverse rendering pipeline for LightStage data under gradient illuminations.
  - Trained a relighting module for LightStage data.

AirLab, Carnegie Mellon University — Pittsburgh, PA
- *Robotics Institute Summer Scholar. Advised by Prof. Sebastian Scherer* — *May. 2023 - Aug. 2023*
  - Built a neural SLAM system with high-quality dense reconstruction.

PUBLICATIONS

- **Kai He**, Chin-Hsuan Wu, Igor Gilitschenski. CTRL-D: Controllable Dynamic 3D Scene Editing with Personalized 2D Diffusion. In *The IEEE Conference on Computer Vision and Pattern Recognition*, 2025.
- **Kai He**, Kaixin Yao, Qixuan Zhang, Jingyi Yu, Lingjie Liu, Lan Xu. DressCode: Autoregressively Sewing and Generating Garments from Text Guidance. In *ACM Transactions on Graphics (Proc. SIGGRAPH 2024, **Best Paper Honorable Mention Award**)*.
- Taotao Zhou*, **Kai He***, Di Wu*, Teng Xu, Qixuan Zhang, Kuixiang Shao, Wenzheng Chen, Lan Xu, Jingyi Yu. Relightable Neural Human Assets from Multi-view Gradient Illuminations. In *The IEEE Conference on Computer Vision and Pattern Recognition*, 2023.
- Youjia Wang, **Kai He**, Taotao Zhou, Kaixin Yao, Nianyi Li, Lan Xu, Jingyi Yu. Free-view Face Relighting using a Hybrid Parametric Neural Model on a SMALL-OLAT Dataset. In *International Journal of Computer Vision*, 2022.

* indicates equal contributions

ACTIVITIES

- **Teaching Assistant, University of Toronto** *Sept. 2024 - Dec. 2024*
  Teaching Assistant in CSC2545 Advanced Topics in ML: Geometric Deep Learning
- **Teaching Assistant, ShanghaiTech** *Sept. 2022 - Jan. 2023*
  Teaching Assistant in CS101 Algorithms and Data Structures
- **ACM Club, ShanghaiTech University** *Sept. 2020 - Jan. 2023*
  President, student coach, ICPC (International Collegiate Programming Contest) participant.
- **GeekPie, ShanghaiTech University** *Sept. 2020 - Dec. 2022*
  Vice-President, core member

HONORS & AWARDS

- Best Paper Honorable Mention Award of ACM SIGGRAPH *2024*
- President's Award (top 2%), ShanghaiTech *2024*
- Outstanding Graduates, Shanghai *2024*
- Merit Student, ShanghaiTech University *2021, 2022*
- Undergraduate Scholarship, ShanghaiTech University *2021, 2022*
- **Gold Medal**, The 45th International Collegiate Programming Contest (Regionals, Yinchuan) *2021*
- **Gold Medal**, The 45th International Collegiate Programming Contest (Regionals, Nanjing) *2020*

SERVICE

- **Reviewer**: SIGGRAPH 2025