

# Kai He

http://academic.hekai.site

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## EDUCATION

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- **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

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- **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

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- **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 (CVPR)*, 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

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- **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

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- 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*

## COURSE PROJECTS

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- **Chrome Dinosaur Game in RISC-V Course of Computer Architecture I:** Use RISC-V to implement the Chrome Dinosaur Game on the Longan Nano development board.
- **ATNet in Computer Network:** Developed a computer network using sound cards and acoustic signals. Implemented from the physical layer to the transport layer, providing a reliable data link that supports ICMP ping, basic NAT, and FTP.

## PROGRAMMING SKILLS

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- **Programming Languages:** Python, C/C++, Java, MATLAB, RISC-V
- **Tools & Frameworks:** PyTorch, Maya, Blender, git,  $\LaTeX$ , Markdown