Wenzheng Chen

wenzhengchen@pku.edu.cn ◇ Homepage ◇ Google Scholar ◇ (86)10-62757194

I am a tenure-track Assistant Professor at Wangxuan Institute of Computer Technology, Peking University. My research focuses on Computational Photography and 3D Vision. I develop novel theories and systems for 3D perception, enabling AI to robustly understand, reconstruct, and interact with the physical world.

EMPLOYMENT

Peking University 2024.05 – Present
Tenure-track Assistant Professor *Beijing, China*

- Research Interest: Computational Photography, 3D Vision.

NVIDIA 2020.09 – 2024.04
Research Scientist *Toronto, Canada*

- Manager: Prof. Sanja Fidler.
- My research on differentiable rendering and neural reconstruction was integrated into NVIDIA's production platforms, including Omniverse and DRIVE Sim. The work was twice selected as NVIDIA GPU Technology Conference (GTC) research highlight and presented by **CEO Jensen Huang** in his keynote (GTC 2021, GTC 2022).

Snapchat (Snap Research) 2019.06 – 2019.09
Research Intern *New York, US*

- Manager: Dr. Jian Wang.
- Developed Snap code recognition techniques, which have been integrated into the Snapchat App.

EDUCATION

University of Toronto 2017.09 – 2023.05
Ph.D. of Computer Science *Toronto, Canada*

- Supervised by Prof. Sanja Fidler and Prof. Kyros Kutulakos.

Shandong University 2014.09 – 2017.07
Master of Computer Science *Jinan, China*

- Supervised by Prof. Changhe Tu.

Shandong University 2010.09 – 2014.07
Bachelor of Computer Science *Jinan, China*

- Supervised by Prof. Changhe Tu.

SELECTED AWARDS AND HONORS

China Association for Science and Technolog (CAST) Young Elite Scientist Sponsorship Program	2024
Peking University Weiming Young Scholar Fellowship	2024
International Conference on Computational Photography (ICCP) Best Poster Award	2021
Robert E. Lansdale/Okino Computer Graphics Graduate Fellowship	2021
Excellent Master Dissertation Award, Shandong University	2017

PROFESSIONAL SERVICE

Area Chair / Program Committee

Program Committee: ACM SIGGRAPH 2025

Area Chair: CVPR 2025, NeurIPS 2025

Journal Reviewer

IEEE TPAMI, IEEE TVCG, IEEE TNNLS, IJCV

Conference Reviewer

Computer Graphics: SIGGRAPH, SIGGRAPH Asia

Computer Vision: CVPR, ICCV, ECCV

Machine Learning: NeurIPS, ICML, ICLR

PUBLICATIONS

** denotes equal contribution, # denotes corresponding author.*

Journal Papers

1. **2024 年度三维视觉前沿趋势与十大进展.**
   刘烨斌, 苏昊, 高林, 弋力, 王鹤, 廖依伊, 施柏鑫, 曹炎培, 洪方舟, 董豪, 张举勇, 王鑫涛, 许华哲, 杨蛟龙, 康炳易, 楚梦渝, 孙赫, **陈文拯**, 马月昕, 张鸿文, 郭裕兰, 周晓巍, 章国锋, 韩晓光, 戴玉超, 陈宝权.
   中国图象图形学报, 1-25, 2025.

2. **多尺度具身影像计算.**
   陈宝权, 刘利斌, **陈文拯**.
   中国计算机学会通讯, 20(6), 2024.

3. **Flexible Isosurface Extraction for Gradient-Based Mesh Optimization.**
   Tianchang Shen, Jacob Munkberg, Jon Hasselgren, Kangxue Yin, Zian Wang, **Wenzheng Chen**, Zan Gojcic, Sanja Fidler, Nicholas Sharp#, Jun Gao#.
   ACM Transactions on Graphics (Proc. SIGGRAPH), 2023. **(Oral, CCF-A)**

4. **39 000-Subexposures/s Dual-ADC CMOS Image Sensor With Dual-Tap Coded-Exposure Pixels for Single-Shot HDR and 3-D Computational Imaging.**
   Rahul Gulve, Navid Sarhangnejad, Gairik Dutta, Motasem Sakr, Don Nguyen, Roberto Rangel, **Wenzheng Chen**, Zhengfan Xia, Mian Wei, Nikita Gusev, Esther YH Lin, Xiaonong Sun, Leo Hanxu, Nikola Katic, Ameer MS Abdelhadi, Andreas Moshovos, Kiriakos N Kutulakos, Roman Genov.
   IEEE Journal of Solid-State Circuits, 58(11):3150-3163, 2023.

5. **Learned Feature Embeddings for Non-Line-of-Sight Imaging and Recognition.**
   Wenzheng Chen*, Fangyin Wei*, Kyros Kutulakos, Szymon Rusinkiewicz, Felix Heide.
   ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2020. **(Oral, CCF-A)**

6. **无菌条件非接触式多通道自然交互手术环境.**
   陶建华, 杨明浩, 王志良, 班晓娟, 解仑, 汪云海, 曾琼, 王飞, 王红迁, 刘斌, 韩志帅, 潘航, **陈文拯**.
   软件学报, 30(10):2986-3004, 2019. **(CCF-A)**

7. **Hallucinating Stereoscopy from a Single Image.**
   Qiong Zeng, **Wenzheng Chen**, Huan Wang, Changhe Tu, Daniel Cohen-Or, Dani Lischinski, Baoquan Chen.
   Computer Graphics Forum (Proc. Eurographics), 2015. **(Oral)**

8. **基于时空测地线传播的 RGB-D 视频分割.**
王斌, **陈文拯**, 钟凡, 屠长河, 秦学英, 彭群生.
计算机辅助设计与图形学学报, 27(10):1816-1822, 2015. **(CCF-A)**

Conference Papers

1. **GeoSplatting: Towards Geometry Guided Gaussian Splatting for Physically-based Inverse Rendering.**
Kai Ye*, Chong Gao*, Guanbin Li, **Wenzheng Chen#**, Baoquan Chen#.
ICCV, 2025. **(CCF-A)**

2. **RainyGS: Efficient Rain Synthesis with Physically-Based Gaussian Splatting.**
Qiyu Dai*, Xingyu Ni*, Qianfan Shen, **Wenzheng Chen#**, Baoquan Chen#, Mengyu Chu#.
CVPR, 2025. **(CCF-A)**

3. **One-shot 3D Object Canonicalization based on Geometric and Semantic Consistency.**
Li Jin, Yujie Wang, **Wenzheng Chen**, Qiyu Dai, Qingzhe Gao, Xueying Qin, Baoquan Chen.
CVPR, 2025. **(Highlight, CCF-A)**

4. **Learning diffusion model from noisy measurement using principled expectation-maximization method.**
Weimin Bai, Weiheng Tang, Enze Ye, Siyi Chen, **Wenzheng Chen**, He Sun.
ICASSP, 2025.

5. **An Expectation-Maximization Algorithm for Training Clean Diffusion Models from Corrupted Observations.**
Weimin Bai, Yifei Wang, **Wenzheng Chen**, He Sun.
NeurIPS, 2024. **(CCF-A)**

6. **4D-Rotor Gaussian Splatting: Towards Efficient Novel View Synthesis for Dynamic Scenes.**
Yuanxing Duan*, Fangyin Wei*, Qiyu Dai, Yuhang He, **Wenzheng Chen#**, Baoquan Chen#.
SIGGRAPH, 2024. **(CCF-A)**

7. **TurboSL: Dense Accurate and Fast 3D by Neural Inverse Structured Light.**
Parsa Mirdehghan, Maxx Wu, **Wenzheng Chen**, David B. Lindell, Kyros Kutulakos.
CVPR, 2024. **(CCF-A)**

8. **QfaR: Location-Guided Scanning of Visual Codes from Long Distances.**
Sizhuo Ma, Jian Wang, **Wenzheng Chen**, Suman Banerjee, Mohit Gupta, Shree Nayar.
MobiCom, 2023. **(Oral, CCF-A)**

9. **Towards Viewpoint Robustness in Bird's Eye View Segmentation.**
Tzofi Klinghoffer, Jonah Philion, **Wenzheng Chen**, Or Litany, Zan Gojcic, Jungseock Joo, Ramesh Raskar, Sanja Fidler, Jose M. Alvarez.
ICCV, 2023. **(CCF-A)**

10. **Neural Fields Meet Explicit Geometric Representations for Inverse Rendering of**

Urban Scenes.
Zian Wang, Tianchang Shen, Jun Gao, Shengyu Huang, Jacob Munkberg, Jon Hasselgren, Zan Gojcic, **Wenzheng Chen**, Sanja Fidler.
CVPR, 2023. **(CCF-A)**

11. **Relightable Neural Human Assets from Multi-view Gradient Illuminations.**
Taotao Zhou, Kai He, Di Wu, Teng Xu, Qixuan Zhang, Kuixiang Shao, **Wenzheng Chen**, Lan Xu, Jingyi Yu.
CVPR, 2023. **(CCF-A)**

12. **Humangen: Generating Human Radiance Fields with Explicit Priors.**
Suyi Jiang, Haoran Jiang, Ziyu Wang, Haimin Luo, **Wenzheng Chen**, Lan Xu.
CVPR, 2023. **(CCF-A)**

13. **Get3d: A Generative Model of High Quality 3D Textured Shapes Learned from Images.**
Jun Gao, Tianchang Shen, Zian Wang, **Wenzheng Chen**, Kangxue Yin, Daiqing Li, Or Litany, Zan Gojcic, Sanja Fidler.
NeurIPS, 2022. **(Spotlight, CCF-A)**

14. **Neural Light Field Estimation for Street Scenes with Differentiable Virtual Object Insertion.**
Zian Wang, **Wenzheng Chen**, David Acuna, Jan Kautz, Sanja Fidler.
ECCV, 2022.

15. **A 39,000 Subexposures/s CMOS Image Sensor with Dual-tap Coded-exposure Data-memory Pixel for Adaptive Single-shot Computational Imaging.**
Rahul Gulve, Navid Sarhangnejad, Gairik Dutta, Motasem Sakr, Don Nguyen, Roberto Rangel, **Wenzheng Chen**, Zhengfan Xia, Mian Wei, Nikita Gusev, Esther YH Lin, Xiaonong Sun, Leo Hanxu, Nikola Katic, Ameer Abdelhadi, Andreas Moshovos, Kiriakos N Kutulakos, Roman Genov.
VLSI Technology and Circuits, 2022.

16. **Extracting Triangular 3D Models, Materials, and Lighting from Images.**
Jacob Munkberg, Jon Hasselgren, Tianchang Shen, Jun Gao, **Wenzheng Chen**, Alex Evans, Thomas Müller, Sanja Fidler.
CVPR, 2022. **(Oral, CCF-A)**

17. **DIB-R++: Learning to Predict Lighting and Material with a Hybrid Differentiable Renderer.**
Wenzheng Chen, Joey Litalien, Jun Gao, Zian Wang, Clement Fuji Tsang, Sameh Khamis, Or Litany, Sanja Fidler.
NeurIPS, 2021. **(CCF-A)**

18. **Image GANs meet Differentiable Rendering for Inverse Graphics and Interpretable 3D Neural Rendering.**
Yuxuan Zhang*, **Wenzheng Chen***, Jun Gao, Huan Ling, Yinan Zhang, Antonio Torralba, Sanja Fidler.
ICLR, 2021. **(Oral)**

19. **Auto-Tuning Structured Light by Optical Stochastic Gradient Descent.**
Wenzheng Chen*, Parsa Mirdehghan*, Sanja Fidler, Kyros Kutulakos.
CVPR, 2020. **(CCF-A)**

20. **Learning Deformable Tetrahedral Meshes for 3D Reconstruction.**
Jun Gao, **Wenzheng Chen**, Tommy Xiang, Alec Jacobson, Morgan Mcguire, Sanja Fidler.
NeurIPS, 2020. **(CCF-A)**

21. **Learning to Predict 3D Objects with an Interpolation-based Differentiable Renderer.**
Wenzheng Chen*, Jun Gao*, Huan Ling*, Edward J. Smith*, Jaakko Lehtinen, Alec Jacobson, Sanja Fidler.
NeurIPS, 2019. **(CCF-A)**

22. **Steady-state Non-line-of-sight imaging.**
Wenzheng Chen, Simon Daneau, Fahim Mannan, Felix Heide.
CVPR, 2019. **(Oral, CCF-A)**

23. **Fast Interactive Object Annotation with Curve-GCN.**
Huan Ling*, Jun Gao*, Amlan Kar, **Wenzheng Chen**, Sanja Fidler.
CVPR, 2019. **(CCF-A)**

24. **Optimal Structured Light a la Carte.**
Parsa Mirdehghan, **Wenzheng Chen**, Kyros Kutulakos.
CVPR, 2018. **(Spotlight, CCF-A)**

25. **A Holistic Approach for Data-driven Object Cutout.**
Huayong Xu, Yangyan Li, **Wenzheng Chen**, Dani Lischinski, Daniel Cohen-Or, Baoquan Chen.
ACCV, 2016.

26. **Synthesizing Training Images for Boosting Human 3D Pose Estimation.**
Wenzheng Chen, Huan Wang, Yangyan Li, Hao Su, Zhenhua Wang, Changhe Tu, Dani Lischinski, Daniel Cohen-Or, Baoquan Chen.
3DV, 2016. **(Oral)**

PATENTS

1. **Extracting triangular 3D models, materials, and lighting from images.**
Carl Jacob Munkberg, Jon Niklas Theodor Hasselgren, Tianchang Shen, Jun Gao, **Wenzheng Chen**, Alex John Bauld Evans, Thomas Müller-Höhne, Sanja Fidler.
US Patent 11,967,024

2. **Hybrid differentiable rendering for light transport simulation systems and applications.**
Wenzheng Chen, Joey Litalien, Jun Gao, Zian Wang, Clement Tse Tsian Christophe Louis Fuji, Sameh Khamis, Or Litany, Sanja Fidler.
US Patent 11,922,558

3. **Neural rendering for inverse graphics generation.**
Wenzheng Chen, Yuxuan Zhang, Sanja Fidler, Huan Ling, Jun Gao, Antonio Torralba Barriuso.
US Patent 11,494,976

4. **Long distance QR code decoding.**
Shree K. Nayar, Jian Wang, **Wenzheng Chen**.
US Patent 11,461,924

5. **Method and system for optimizing depth imaging.**
   Kiriakos Neoklis Kutulakos, Seyed Parsa Mirdehghan, **Wenzheng Chen**.
   US Patent 11,341,665

6. **Systems and methods for polygon object annotation and a method of training an object annotation system.**
   Sanja Fidler, Amlan Kar, Huan Ling, Jun Gao, **Wenzheng Chen**, David Jesus Acuna Marrero.
   US Patent 10,643,130