Beibei Wang, Ph.D.

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🌐 https://wangningbei.github.io/

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Employment

2023 – ····	🔖	**Full Professor**, Nanjing University
2022 – ····	🔖	**Part-time Professor**, Nankai University
2017 – 2023	🔖	**Associate Professor**, Nanjing University of Science and Technology
2015 – 2017	🔖	**Postdoc.**, INRIA

Education

2012 – 2014	🔖	**Visiting Ph.D., Telecom ParisTech, France.**
2009 – 2014	🔖	**Ph.D., Shandong University, China.** Thesis title: *Research on Point-based Global Illumination.*
2005 – 2009	🔖	**Bachelor degress. Software Engineering, Shandong University, China.**

Interests

🔖 **My research focuses mainly on rendering and material appearance (both physically based models and neural appearances). I am also interested in 3D computer vision (e.g., surface reconstruction and relighting). The main target is to create a realistic 3D digital world, including creating (reconstructing and generating) 3D assets (geometries and materials) and rendering these assets realistically.**

Students

Current PhD Students:
- 🔖 **Zuoliang Zhu (co-supervised)**
- 🔖 **Zibo Zhang**
- 🔖 **Zixuan Li**
- 🔖 **Ziqiong Wang**
- 🔖 **Gaole Pan**
- 🔖 **Weiqing Xiao**

Current Master Students:
- 🔖 **Hanxiao Sun**
- 🔖 **Conghui Hao**
- 🔖 **Di Luo**
- 🔖 **Jiawei Lu**
- 🔖 **Meng Duan**

Students (continued)

- Yingjie Tang
- Guangming Fu
- Yixin Zhu
- Kunxin Guang
- Xiangzhao Zeng
- Yanhong Liu
- Zijian Ding

Alumni:
- Jiahui Fan (co-supervised) (PhD)
- Hong Deng (MS)
- Weiheng Lin (MS)
- Tao Wen (MS)
- Zhongmin Xue (MS)
- Wenhua Jin (MS)
- Yang Liu (MS)
- Wenshi Wu (MS)
- Tianyi Yang (MS)
- Jie Jiang (MS)
- Gaole Pan (MS, now PhD)

Professional Services

Organization chair

2026
- CAD/CG 2026.

Program co-chair

2025
- Eurographics Symposium on Rendering (EGSR).

Committee

- Siggraph IPC.

2026
- SiggraphAsia IPC.
- Eurographics (EG) Sorting Committee.
- Eurographics Symposium on Rendering (EGSR) IPC.

2025
- Siggraph Sorting Committee.
- SiggraphAsia IPC.
- Eurographics (EG) IPC.
- High Performance Graphics (HPG) IPC.

2024
- Siggraph IPC.
- SiggraphAsia (communication and poster) IPC.
- Eurographics Symposium on Rendering (EGSR) IPC.
- Eurographics (EG) IPC.

Professional Services (continued)

- ◼ **Pacific Graphics (PG) Sorting Committee**.
- ◼ **High Performance Graphics (HPG) IPC**.

2023
- ◼ **Siggraph IPC**.
- ◼ **Eurographics Symposium on Rendering (EGSR) IPC**.
- ◼ **Eurographics STARs IPC**.
- ◼ **High Performance Graphics (HPG) IPC**.

2022
- ◼ **Eurographics Symposium on Rendering (EGSR) IPC**.
- ◼ **High Performance Graphics (HPG) IPC**.

2021
- ◼ **High Performance Graphics (HPG) IPC**.
- ◼ **Eurographics Symposium on Rendering (EGSR) IPC**.

Teaching

Spring, 2026	◼ **Photorealistic Rendering**.
Fall, 2025	◼ **Data structure and Algorithm**.
Fall, 2024	◼ **Data structure and Algorithm**.
Spring, 2023	◼ **Algorithm Design and Analysis**.
Spring, 2022	◼ **Algorithm Design and Analysis**.
Spring, 2020	◼ **Algorithm Design and Analysis (English)**.
Fall, 2020	◼ **Algorithm Design and Analysis**.

Research Publications

Journal Articles

1. J. Fan, F. Luan, J. Yang, M. Hasan, and B. Wang, "Rng: Relightable neural gaussians," *Proceedings of CVPR 2025*, 2025.

2. H. Sun, Y. Gao, J. Xie, J. Yang, and B. Wang, "Svg-ir: Spatially-varying gaussian splatting for inverse rendering," *Proceedings of CVPR 2025*, 2025.

3. Z. Zhu, B. Wang, and J. Yang, "Gs-ror2: Bidirectional-guided 3dgs and sdf for reflective object relighting and reconstruction," *ACM Trans. Graph.*, vol. 45, no. 1, Sep. 2025, ISSN: 0730-0301. 🔗 DOI: `10.1145/3759248`.

4. J. Li, L. Wang, L. Zhang, and **Beibei Wang**, "Tensosdf: Roughness-aware tensorial representation for robust geometry and material reconstruction," *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2024)*, vol. 43, no. 4, 150:1–13, 2024.

5. J. Fan, **Beibei Wang**, W. Wu, M. Hašan, J. Yang, and L.-Q. Yan, "Efficient specular glints rendering with differentiable regularization," *IEEE Transactions on Visualization and Computer Graphics*, vol. 29, no. 6, pp. 2940–2949, 2023.

6. J. Guo, Z. Li, X. He, *et al.*, "Metalayer: A meta-learned bsdf model for layered materials," *ACM Transactions on Graphics*, vol. 42, no. 6, 2023.

7. P. Shen, R. Li, **Beibei Wang**, and L. Liu, "Scratch-based reflection art via differentiable rendering," *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2023)*, vol. 42, no. 4, pp. 1–12, 2023.

8 H. Zhang and **Beibei Wang**, "World-space spatiotemporal path resampling for path tracing," *Computer Graphics Forum (Proceedings of PG 2023)*, 2023.

9 **Beibei Wang**, W. Jin, J. Fan, J. Yang, N. Holzschuch, and L.-Q. Yan, "Position-free multiple-bounce computations for smith microfacet bsdfs," *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2022)*, vol. 41, no. 4, 134:1–134:14, 2022.

10 **Beibei Wang**, W. Jin, M. Hašan, and L.-Q. Yan, "Spongecake: A layered microflake surface appearance model," *ACM Transactions on Graphics*, vol. 42, no. 1, 2022.

11 H. Deng, Y. Liu, **Beibei Wang**, *et al.*, "Constant-cost spatio-angular prefiltering of glinty appearance using tensor decomposition," *ACM Transactions on Graphics*, vol. 41, no. 2, 22:1–22:17, 2022.

12 T. Wen, **Beibei Wang**, L. Zhang, J. Guo, and N. Holzschuch, "Svbrdf recovery from a single image with highlights using a pre-trained generative adversarial network," *Computer Graphics Forum*, vol. 41, no. 6, pp. 110–123, 2022.

13 L. Ge, **Beibei Wang**, L. Wang, X. Meng, and N. Holzschuch, "Interactive simulation of scattering effects in participating media using a neural network model," *IEEE Transactions on Visualization and Computer Graphics*, vol. 27, no. 7, pp. 3123–3134, 2021.

14 W. Lin, **Beibei Wang**, J. Yang, L. Wang, and L.-Q. Yan, "Path-based monte carlo denoising using a three-scale neural network," *Computer Graphics Forum*, vol. 40, no. 1, pp. 369–381, 2021.

15 **Beibei Wang**, L. Ge, and N. Holzschuch, "Precomputed multiple scattering for rapid light simulation in participating media," *IEEE Transactions on Visualization and Computer Graphics*, vol. 26, no. 7, pp. 2456–2470, 2020. ᴅᴏɪ: 10.1109/TVCG.2018.2890466.

16 **Beibei Wang**, M. Hašan, and L.-Q. Yan, "Path cuts: Efficient rendering of pure specular light transport," *ACM Transactions on Graphics*, vol. 39, no. 6, Nov. 2020.

17 Y. Liang, **Beibei Wang**, L. Wang, and N. Holzschuch, "Fast computation of single scattering in participating media with refractive boundaries using frequency analysis," *IEEE Transactions on Visualization and Computer Graphics*, vol. 26, no. 10, pp. 2961–2969, 2020. ᴅᴏɪ: 10.1109/TVCG.2019.2909875.

18 **Beibei Wang** and N. Holzschuch, "Point-based rendering for homogeneous participating media with refractive boundaries," *IEEE Transactions on Visualization and Computer Graphics*, vol. 24, no. 10, pp. 2743–2757, 2018. ᴅᴏɪ: 10.1109/TVCG.2017.2768525.

19 **Beibei Wang**, L. Wang, and N. Holzschuch, "Fast global illumination with discrete stochastic microfacets using a filterable model," *Computer Graphics Forum*, vol. 37, no. 7, pp. 55–64, 2018.

20 **Beibei Wang**, X. Meng, and T. Boubekeur, "Wavelet point-based global illumination," *Computer Graphics Forum (Special Issue on EGSR 2015)*, vol. 34, no. 4, pp. 143–154, 2015.

21 **Beibei Wang**, J. Huang, B. Buchholz, X. Meng, and T. Boubekeur, "Factorized point-based global illumination," *Computer Graphics Forum (Special Issue on EGSR 2013)*, vol. 32, no. 4, pp. 117–123, 2013.

Conference Proceedings

1 Y. Du, L. Wang, and B. Wang, "Facial microscopic structures synthesis from a single unconstrained image," in *Proceedings of the Special Interest Group on Computer Graphics and Interactive Techniques Conference Conference Papers*, ser. SIGGRAPH Conference Papers '25, New York, NY, USA: Association for Computing Machinery, 2025, ɪsʙɴ: 9798400715402. ᴅᴏɪ: 10.1145/3721238.3730760.

2 P. Hong, M. Duan, B. Wang, C. Yuksel, T. Zeltner, and D. Lin, "Sample space partitioning and spatiotemporal resampling for specular manifold sampling," Dec. 2025. ᴅᴏɪ: 10.1145/3757377.3763927.

3. R. Li, X. Liu, R. Wang, P. Shen, L. Liu, and B. Wang, "Bidirectional plateau-border scattering distribution function for realistic and efficient foam rendering.," in *EGSR*, 2025.

4. J. Lu, K. Guang, C. Hao, *et al.*, "Joint gaussian deformation in triangle-deformed space for high-fidelity head avatars.," in *EGSR*, 2025.

5. Y. Xing, Z. Zeng, Y. Du, L. Wang, and B. Wang, "Diffusion-guided relighting for single-image svbrdf estimation," in *Proceedings of SIGGRAPH Asia 2025*, 2025.

6. Z. Xu, X. Chen, C. Liu, *et al.*, "Towards comprehensive neural materials: Dynamic structure-preserving synthesis with accurate silhouette at instant inference speed," in *Proceedings of the Special Interest Group on Computer Graphics and Interactive Techniques Conference Conference Papers*, ser. SIGGRAPH Conference Papers '25, Association for Computing Machinery, 2025, ISBN: 9798400715402. DOI: 10.1145/3721238.3730626.

7. Z.-L. Zhu, J. Yang, and B. Wang, "Gaussian splatting with discretized sdf for relightable assets," in *Proceedings of IEEE International Conference on Computer Vision (ICCV)*, 2025.

8. X. Chen, L. Wang, and **Beibei Wang**, "Real-time neural woven fabric rendering," in *Proceedings of SIGGRAPH 2024*, 2024.

9. J. Li, Z. Chen, X. Wu, L. Wang, **Beibei Wang**, and L. Zhang, "Neural super-resolution for real-time rendering with radiance demodulation," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.

10. D. Luo, H. Sun, L. Ma, J. Yang, and **Beibei Wang**, "Correlation-aware encoder-decoder with adapters for svbrdf acquisition," in *Proceedings of SIGGRAPH Asia 2024*, 2024.

11. Y. Tang, Z. Li, M. Hašan, J. Yang, and **Beibei Wang**, "Woven fabric capture with a reflection-transmission photo pair," in *Proceedings of SIGGRAPH 2024*, 2024.

12. Y. Cui, G. Pan, J. Yang, L. Zhang, L.-Q. Yan, and **Beibei Wang**, "Multiple-bounce smith microfacet brdfs using the invariance principle," in *Proceedings of SIGGRAPH Asia 2023*, 2023.

13. J. Fan, **Beibei Wang**, M. Hašan, J. Yang, and L.-Q. Yan, "Neural biplane representation for btf rendering and acquisition," in *Proceedings of SIGGRAPH 2023*, 2023.

14. J. Fan, **Beibei Wang**, M. Hašan, J. Yang, and L.-Q. Yan, "Neural layered brdfs," in *Proceedings of SIGGRAPH 2022*, 2022.

15. W. Jin, **Beibei Wang**, M. Hašan, Y. Guo, S. Marschner, and L.-Q. Yan, "Woven fabric capture from a single photo," in *Proceedings of SIGGRAPH Asia 2022*, 2022.

16. H. Li, **Beibei Wang**, C. Tu, K. Xu, N. Holzschuch, and L.-Q. Yan, "Unbiased caustics rendering guided by representative specular paths," in *Proceedings of SIGGRAPH Asia 2022*, 2022.

17. Y. Zhao, **Beibei Wang**, Y. Xu, Z. Zeng, L. Wang, and N. Holzschuch, "Joint svbrdf recovery and synthesis from a single image using an unsupervised generative adversarial network.," in *EGSR (DL)*, 2020, pp. 53–66.

18. **Beibei Wang** and H. Bowles, "A robust and flexible real-time sparkle effect.," in *EGSR (DL)*, Dublin, Ireland, 2016, pp. 49–54.

19. **Beibei Wang**, J.-D. Gascuel, and N. Holzschuch, "Point-based light transport for participating media with refractive boundaries.," in *EGSR (DL)*, Dublin, Ireland, 2016, pp. 109–119.