

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 degree**. Software Engineering, Shandong University, China.

Interests

- 📌 My research focuses mainly on rendering and material appearance. 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

- PhD Students:
 - 📌 **Jiahui Fan (co-supervised)**
 - 📌 **Zuoliang Zhu (co-supervised)**
 - 📌 **Zibo Zhang**
 - 📌 **Zixuan Li**
 - 📌 **Ziqiong Wang**
- Master Students:
 - 📌 **Hong Deng**
 - 📌 **Weiheng Lin**
 - 📌 **Tao Wen**
 - 📌 **Zhongmin Xue**
 - 📌 **Wenhua Jin**
 - 📌 **Yang Liu**
 - 📌 **Wenshi Wu**

Students (continued)

- 📖 Tianyi Yang
- 📖 Jie Jiang
- 📖 Gaole Pan
- 📖 Hanxiao Sun
- 📖 Conghui Hao
- 📖 Di Luo
- 📖 Jiawei Lu
- 📖 Meng Duan
- 📖 Yingjie Tang
- 📖 Guangming Fu
- 📖 Yixin Zhu
- 📖 Kunxin Guang

Professional Services

Program co-chair

- 2025 📖 Eurographics Symposium on Rendering (EGSR).

Committee

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

- Fall, 2024 📖 Data structure and Algorithm.
- Spring, 2023 📖 Algorithm Design and Analysis.


Teaching (continued)

- 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. 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.
- 2 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.
- 3 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.
- 4 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.
- 5 H. Zhang and **Beibei Wang**, “World-space spatiotemporal path resampling for path tracing,” *Computer Graphics Forum (Proceedings of PG 2023)*, 2023.
- 6 **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.
- 7 **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.
- 8 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.
- 9 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.
- 10 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.
- 11 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.
- 12 **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. [DOI: 10.1109/TVCG.2018.2890466](https://doi.org/10.1109/TVCG.2018.2890466).
- 13 **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.
- 14 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. [DOI: 10.1109/TVCG.2019.2909875](https://doi.org/10.1109/TVCG.2019.2909875).

- 15 **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.  DOI: 10.1109/TVCG.2017.2768525.
- 16 **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.
- 17 **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.
- 18 **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 X. Chen, L. Wang, and **Beibei Wang**, “Real-time neural woven fabric rendering,” in *Proceedings of SIGGRAPH 2024*, 2024.
- 2 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.
- 3 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.
- 4 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.
- 5 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.
- 6 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.
- 7 J. Fan, **Beibei Wang**, M. Hašan, J. Yang, and L.-Q. Yan, “Neural layered brdfs,” in *Proceedings of SIGGRAPH 2022*, 2022.
- 8 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.
- 9 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.
- 10 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.
- 11 **Beibei Wang** and H. Bowles, “A robust and flexible real-time sparkle effect,” in *EGSR (DL)*, Dublin, Ireland, 2016, pp. 49–54.
- 12 **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.