郭 亨

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个人主页

工作经历

北京邮电大学	北京, 中国
拔尖人才教授	2023年11月 – 今
大阪大学	大阪, 日本
特任助理教授	2022年4月 – 2023.10

教育背景

大阪大学	大阪, 日本
多媒体信息处理，博士 | 导师：*Yasuyuki Matsushita*，施柏鑫	2018年10月 – 2022年3月
电子科技大学	成都, 中国
信号与信息处理，硕士 | 导师：曾兵，刘帅成	2015年9月 – 2018年7月
电子科技大学	成都, 中国
电子信息工程，学士	2011年9月 – 2015年7月

主持项目

国家自然科学基金优秀青年科学基金项目（海外），**主持**	2024 - 2027
国家自然科学基金面上项目，**主持**	2025 - 2028
国家自然科学基金企业创新发展联合基金项目，**参与**	2025 - 2028
京津冀基础研究专项，**主持**	2025 - 2028
河北省重大科技支撑计划项目，**主持**	2025 - 2027

获奖荣誉

International Conference on Network Infrastructure and Digital Content 最佳论文 (Top 1%)	2023年10月
Meeting on Image Recognition and Understanding 最佳学生论文 (Top 1%)	2020年4月

代表性工作

(∗ Equal contribution, † Corresponding author.)

[1] Wenjie Li, Jinglei Shi, Jin Han, **Heng Guo**†, Zhanyu Ma. "Seeing Through the Rain: Resolving High-Frequency Conflicts in Deraining and Super-Resolution via Diffusion Guidance." AAAI Conference on Artificial Intelligence. (**AAAI 2025**).

[2] Zhenyu Jin, Wenjie Li, Zhanyu Ma, **Heng Guo**†. "SpecGen: Neural Spectral BRDF Generation via Spectral-Spatial Tri-plane Aggregation." IEEE Winter Conference on Applications of Computer Vision. (**WACV 2026**).

[3] Wenjie Li, Xiangyi Wang, **Heng Guo**†, Guangwei Gao, Zhanyu Ma. "Self-Supervised Selective-Guided Diffusion Model for Old-Photo Face Restoration." Annual Conference on Neural Information Processing Systems. (**NeurIPS 2025**).

[4] Wenjie Li, **Heng Guo**†, Yuefeng Hou, Guangwei Gao, Zhanyu Ma. "Dual-domain Modulation Network for Lightweight Image Super-Resolution." IEEE Transactions on Multimedia. (**TMM 2025**).

[5] Yufei Han, Bowen Tie, **Heng Guo**†, Youwei Lyu, Si Li†, Boxin Shi, Yunpeng Jia, Zhanyu Ma. "PolGS: Polarimetric Gaussian Splatting for Fast Reflective Surface Reconstruction." IEEE International Conference on Computer Vision. (**ICCV 2025**).

[6] Kailong Zhang, Youwei Lyu, **Heng Guo**†, Si Li, Zhanyu Ma, Boxin Shi. "PolarAnything: Diffusion-based Polarimetric Image Synthesis." IEEE International Conference on Computer Vision. (**ICCV 2025 Highlight**).

[7] Chu Zhou, Yixin Yang, Junda Liao, **Heng Guo**, Boxin Shi, Imari Sato. "Polarimetric Neural Field with Unified Complex-Valued Wavefunction." IEEE International Conference on Computer Vision. (**ICCV 2025**).

[8] Mingzhi Pei, Xu Cao, Xiangyi Wang, **Heng Guo**[†], Zhanyu Ma. "PMNI: Pose-free Multi-view Normal Integration for Reflective and Textureless Surface Reconstruction." IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2025**).

[9] Shuangfan Zhou, Chu Zhou, Youwei Lyu, **Heng Guo**[†], Zhanyu Ma, Boxin Shi, Imari Sato. "PIDSR: Complementary Polarized Image Demosaicing and Super-Resolution." IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2025**).

[10] Mengqiu Xu, Kaixin Chen, **Heng Guo**, Yixiang Huang, Ming Wu, Zhenwei Shi, Chuang Zhang, Jun Guo. "MFogHub: Bridging Multi-Regional and Multi-Satellite Data for Global Marine Fog Detection and Forecasting." IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2025**).

[11] Songyun Yang, Yufei Han, Jilong Zhang, Kongming Liang, Peng Yu, Zhaowei Qu, **Heng Guo**. "RotatedMVPS: Multi-view Photometric Stereo with Rotated Natural Light." IEEE Conference on Multimedia and Expo. (**ICME 2025 Oral**).

[12] Youwei Lyu*, **Heng Guo***, Kailong Zhang, Si Li, Boxin Shi. "SfPUEL: Shape from Polarization under Unknown Environment." Annual Conference on Neural Information Processing Systems. (**NeurIPS 2024**).

[13] Li Wenjie, **Heng Guo**[†], Xuannan Liu, Kongming Liang, Jiani Hu, Zhanyu Ma, Jun Guo. "Efficient Face Super-Resolution via Wavelet-Based Feature Enhancement Network." ACM International Conference on Multimedia. (**ACM MM 2024**).

[14] **Heng Guo***, Jieji Ren*, Feishi Wang*, Boxin Shi, Mingjun Ren, Yasuyuki Matsushita. "DiLiGenRT: A Photometric Stereo Dataset with Quantified Roughness and Translucency." IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2024**).

[15] Yufei Han, **Heng Guo**[†], Koki Fukai, Hiroaki Santo, Boxin Shi, Fumio Okura, Zhanyu Ma, Yunpeng Jia. "NeRSP: Neural 3D Reconstruction for Reflective Objects with Sparse Polarized Images." IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2024**).

[16] Feishi Wang*, Jieji Ren*, **Heng Guo***, Mingjun Ren, Boxin Shi. "DiLiGenT-Pi: Photometric Stereo for Planar Surfaces with Rich Details – Benchmark Dataset and Beyond." International Conference on Computer Vision. (**ICCV 2023**).

[17] Jun Hoong Chan, Bohan Yu, **Heng Guo**, Jieji Ren, Zongqing Lu, Boxin Shi. "ReLeaPS: Reinforcement Learning-based Illumination Planning for Generalized Photometric Stereo." International Conference on Computer Vision. (**ICCV 2023**).

[18] Jipeng Lv, **Heng Guo**[†], Guanying Chen, Jinxiu Liang, Boxin Shi. "Non-Lambertian Multispectral Photometric Stereo via Spectral Reflectance Decomposition." International Joint Conferences on Artificial Intelligence (**IJCAI 2023**).

[19] **Heng Guo**, Boxin Shi, Yasuyuki Matsushita. "Neural BRDF Plugin for Unsupervised Photometric Stereo." IEEE International Conference on Network Intelligence and Digital Content (**IC-NIDC 2023 best paper**).

[20] Feiran Li*, **Heng Guo***, Hiroaki Santo, Fumio Okura, Yasuyuki Matsushita. "Learning to Synthesize Photorealistic Dual-pixel Images from RGBD frames." International Conference on Computational Photography (**ICCP 2023**).

[21] Lilika Makabe, **Heng Guo**, Hiroaki Santo, Fumio Okura, Yasuyuki Matsushita. "Near-light Photometric Stereo with Symmetric Lights." International Conference on Computational Photography. (**ICCP 2023**).

[22] **Heng Guo**, Fumio Okura, Boxin Shi, Takuya Funatomi, Yasuhiro Mukaigawa, Yasuyuki Matsushita. "Multispectral Photometric Stereo for Spatially-Varying Spectral Reflectances." International Journal of Computer Vision. (**IJCV 2022**).

[23] **Heng Guo***, Zhipeng Mo*, Boxin Shi, Feng Lu, Sai-Kit Yeung, Ping Tan, Yasuyuki Matsushita. "Patch-based Uncalibrated Photometric Stereo under Natural Illumination." IEEE Transactions on Pattern Analysis and Machine Intelligence. (**TPAMI 2021**).

[24] **Heng Guo**, Fumio Okura, Boxin Shi, Takuya Funatomi, Yasuhiro Mukaigawa, Yasuyuki Matsushita. "Multispectral Photometric Stereo for Spatially-Varying Spectral Reflectances: A Well-posed Problem?" IEEE Conference on Computer Vision and Pattern Recognition. (**CVPR 2021**).

[25] **Heng Guo**, Boxin Shi, Michael Waechter, Yasuyuki Matsushita. "Self-calibrating Near-light Photometric Stereo under Anisotropic Light Emission." Meeting on Image Recognition and Understanding (**MIRU 2020 outstanding paper**).

[26] **Heng Guo**, Shuaicheng Liu, Shuyuan Zhu, Heng Tao Shen, Bing Zeng. "View-Consistent MeshFlow for Stereoscopic Video Stabilization." IEEE Transactions on Computational Imaging. (**TCI 2018**).

[27] **Heng Guo**, Shuaicheng Liu, Tong He, Shuyuan Zhu, Bing Zeng, Moncef Gabbouj. "Joint Video Stitching and Stabilization from Moving Cameras." IEEE Transactions on Image Processing (**TIP 2016**).

[28] **Heng Guo**, Shuaicheng Liu, Shuyuan Zhu, Bing Zeng. "Joint Bundled Camera Paths for Stereoscopic Video Stabilization." International Conference on Image Processing. (**ICIP 2016**) (Oral).

学术服务

- 期刊审稿人: IEEE TPAMI, IJCV
- 会议审稿人: CVPR, ECCV, ICCV, NeurIPS, AAAI
- Demo Chair: ACCV 2026
- 论坛主席：第24期CCF-CV视界无限系列研讨会
- 2025 CSIG青年科学家会议智能科学成像论坛召集人
- 论坛报告人：第22届日本信息科学与技术论坛 (情報科学技術フォーラム)