

Jiawang Bian, 边佳旺

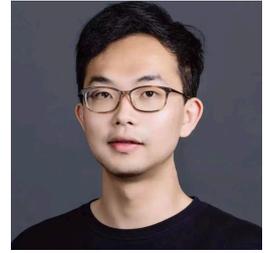
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🌐 <http://jwbian.net/>

🔄 <https://github.com/JiawangBian/>

📄 <https://scholar.google.com.au/citations?user=zeGz5JcAAAAJ&hl=en/>



Jiawang Bian is a Research Scientist at Bytedance. He was a postdoctoral researcher at the MBZUAI working with Prof. Ian Reid. Before this, he was a postdoctoral researcher at the University of Oxford working with Prof. Philip Torr. He received his Ph.D. from the University of Adelaide and his Bachelor's degree from Nankai University. His research interests lie in the field of 3D Computer Vision.

Degrees

- Feb. 2019 – Apr. 2022 📖 **Ph.D., Computer Science** at the University of Adelaide, Australia.
Advised by Prof. Ian Reid and Prof. Chunhua Shen
- Aug. 2012 – Jun. 2016 📖 **B.Eng., Computer Science** at the Nankai University, China.
Advised by Prof. Ming-Ming Cheng

Career

- Apr. 2025 – Now 📖 **Research Scientist**, Bytedance Inc, USA.
- Mar. 2024 – Apr. 2025 📖 **Postdoctoral Researcher**, MBZUAI, UAE.
- Sep. 2022 – Dec. 2023 📖 **Postdoctoral Researcher**, University of Oxford, UK.
- Aug 2016. – Aug. 2017 📖 **Research Assistant**, SUTD, Singapore.

Internship

- Sep. 2021 – Jan. 2022 📖 **Research Intern**, Meta Reality Lab, UK.
- Apr. 2021 – Jul. 2021 📖 **Research Intern**, Amazon Web Service, US.
- Sep. 2018 – Jan. 2019 📖 **Research Intern**, TuSimple, China.

Teaching

- 2024 📖 **Advanced Research Method**, Teaching Assistant at the MBZUAI.
- 2022 📖 **Computer Vision**, Guest Lecturer at the University of Adelaide.
- 2021 📖 **Master Data Science Research Project**, Teaching Assistant at the University of Adelaide.

Teaching (continued)

- 2020  **Big Data Analysis and Project**, Teaching Assistant at the University of Adelaide.
-  **Master Data Science Research Project**, Teaching Assistant at the University of Adelaide.

Invited Presentations

- Dec. 2023  **High-quality Neural Reconstruction in Real-world Scenes**, presented at MBZUAI, Nanjing University, Shanghai Jiao Tong University, and Zhejiang University.
- Nov. 2023  **Self-supervised Depth Estimation in Dynamic Scenes**, an online presentation hosted by Jiangmen (将门).
- Jul. 2022  **Unsupervised Indoor Depth Estimation**, online presentation hosted by Intelligent Things (智东西).
- May 2022  **An Overview of Unsupervised Monocular Depth Estimation**, presented at the University of Electronic Science and Technology of China (UESTC) and Hefei University of Technology.
- Nov. 2019  **Unsupervised Scale-consistent Depth Estimation for Visual SLAM**, online presented via EXTREME VISION (极市).
- Jun. 2017  **Robust Feature Matching and Fast GMS Solution**, online presented via both EXTREME VISION (极市) and VALSE.

Peer review

- Journal  TPAMI, IJCV, TOG, TRO, TIP, TNNLS, TMM, RA-L, ISPRS, PR, KBS
- Conference  NeurIPS, ICLR, SIGGRAPH, CVPR, ICCV, ECCV, AAAI, BMVC, ACCV, ICRA, IROS, WACV, PRCV, CVM

Publication

I have published over 25 technical papers that appeared in international journals and conferences. The leading conferences in computer vision (ICCV, ECCV, CVPR) and machine learning (NIPS, ICLR) have a low acceptance rate typically below 25%, and publications in their proceedings are considered as important as journal publications. The field's top journals are the International Journal of Computer Vision (IJCV) and the IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI). Overall, my publications have over 5,300 citations and my h-index is 21, both obtained from Google Scholar.

Journal Articles

-  Zhou, K., **Bian, J.-W.**, Zheng, J.-Q., Zhong, J., Xie, Q., Trigoni, N., & Markham, A. (2025). Manydepth2: Motion-aware self-supervised monocular depth estimation in dynamic scenes. *IEEE Robotics and Automation Letters*.  doi:10.1109/LRA.2025.3568337

- 2 Xu, G., Yin, W., Zhang, J., Wang, O., Niklaus, S., Chen, S., & **Bian, J.-W.** (2024). Towards Domain-agnostic Depth Completion. *Machine Intelligence Research*. [doi:10.1007/s11633-024-1494-4](https://doi.org/10.1007/s11633-024-1494-4)
- 3 Zhang, L., Hou, Q., Liu, Y., **Bian, J.-W.**, Xu, X., Zhou, J. T., & Zhu, C. (2024). Deep Negative Correlation Classification. *Machine Learning*. [doi:10.1007/s10994-024-06604-0](https://doi.org/10.1007/s10994-024-06604-0)
- 4 Sun, L., **Bian, J.-W.**, Zhan, H., Yin, W., Reid, I., & Shen, C. (2023). SC-DepthV3: Robust Self-supervised Monocular Depth Estimation for Dynamic Scenes. *IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2023.3322549](https://doi.org/10.1109/TPAMI.2023.3322549)
- 5 **Bian, J.-W.**, Zhan, H., Wang, N., Chin, T.-J., Shen, C., & Reid, I. (2022). Auto-Rectify Network for Un-supervised Indoor Depth Estimation. *IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2021.3136220](https://doi.org/10.1109/TPAMI.2021.3136220)
- 6 **Bian, J.-W.**, Zhan, H., Wang, N., Li, Z., Zhang, L., Shen, C., ... Reid, I. (2021). Unsupervised scale-consistent depth learning from video. *International Journal on Computer Vision (IJCV)*. [doi:10.1007/s11263-021-01484-6](https://doi.org/10.1007/s11263-021-01484-6)
- 7 Liu, Y., Cheng, M.-M., Fan, D.-P., Zhang, L., **Bian, J.-W.**, & Tao, D. (2021). Semantic edge detection with diverse deep supervision. *International Journal on Computer Vision (IJCV)*. [doi:10.1007/s11263-021-01539-8](https://doi.org/10.1007/s11263-021-01539-8)
- 8 Liu, Y., Zhang, X.-Y., **Bian, J.-W.**, Zhang, L., & Cheng, M.-M. (2021). SAMNet: Stereoscopically attentive multi-scale network for lightweight salient object detection. *IEEE Transactions on Image Processing (TIP)*. [doi:10.1109/TIP.2021.3065239](https://doi.org/10.1109/TIP.2021.3065239)
- 9 Wu, Y.-H., Liu, Y., Xu, J., **Bian, J.-W.**, Gu, Y., & Cheng, M.-M. (2021). MobileSal: Extremely efficient rgb-d salient object detection. *IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2021.3134684](https://doi.org/10.1109/TPAMI.2021.3134684)
- 10 **Bian, J.-W.**, Lin, W.-Y., Liu, Y., Zhang, L., Yeung, S.-K., Cheng, M.-M., & Reid, I. (2020). GMS: Grid-based motion statistics for fast, ultra-robust feature correspondence. *International Journal on Computer Vision (IJCV)*. [doi:10.1007/s11263-019-01280-3](https://doi.org/10.1007/s11263-019-01280-3)
- 11 Zhang, L., Shi, Z., Zhou, J. T., Cheng, M.-M., Liu, Y., **Bian, J.-W.**, ... Shen, C. (2020). Ordered or orderless: A revisit for video based person re-identification. *IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2020.2976969](https://doi.org/10.1109/TPAMI.2020.2976969)
- 12 Liu, Y., Cheng, M.-M., Hu, X., **Bian, J.-W.**, Zhang, L., Bai, X., & Tang, J. (2019). Richer convolutional features for edge detection. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2018.2878849](https://doi.org/10.1109/TPAMI.2018.2878849)
- 13 Zhang, L., Shi, Z., Cheng, M.-M., Liu, Y., **Bian, J.-W.**, Zhou, J. T., ... Zeng, Z. (2019). Nonlinear regression via deep negative correlation learning. *IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)*. [doi:10.1109/TPAMI.2019.2943860](https://doi.org/10.1109/TPAMI.2019.2943860)

Conference Proceedings

- 1 **Bian, J.-W.**, Bian, W., Prisacariu, V. A., & Torr, P. H. (2024). PoRF: Pose Residual Field for Accurate Neural Surface Reconstruction. In *International Conference on Learning Representations (ICLR)*. Retrieved from <https://porf.active.vision/>
- 2 Chen, S., Bhalgat, Y., Li, X., **Bian, J.-W.**, Li, K., Wang, Z., & Prisacariu, V. A. (2024). Neural refinement for absolute pose regression with feature synthesis. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Retrieved from <https://nefes.active.vision/>
- 3 Wu, J., **Bian, J.-W.**, Li, X., Wang, G., Reid, I., Torr, P., & Prisacariu, V. (2024). GaussCtrl: Multi-View Consistent Text-Driven 3D Gaussian Splatting Editing. In *European Conference on Computer Vision (ECCV)*. Retrieved from <https://gaussctrl.active.vision/>

- 4 Bian, W., Wang, Z., Li, K., **Bian, J.-W.**, & Prisacariu, V. A. (2023). NoPe-NeRF: Optimising Neural Radiance Field with No Pose Prior. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Retrieved from [🔗 https://nope-nerf.active.vision/](https://nope-nerf.active.vision/)
- 5 Li, K., **Bian, J.-W.**, Castle, R., Torr, P., & Prisacariu, V. A. (2023). MobileBrick: Building lego for 3d reconstruction on mobile devices. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Retrieved from [🔗 https://code.active.vision/MobileBrick/](https://code.active.vision/MobileBrick/)
- 6 **Bian, J.-W.**, Zhan, H., & Reid, I. (2021). NVSS: High-quality novel view selfie synthesis. In *International Conference on 3D Vision (3DV)*. Retrieved from [🔗 https://jwbian.net/nvss_3dv](https://jwbian.net/nvss_3dv)
- 7 Zhang, X., Wang, X., **Bian, J.-W.**, Shen, C., & You, M. (2021). Diverse knowledge distillation for end-to-end person search. In *Association for the Advancement of Artificial Intelligence (AAAI)*. Retrieved from [🔗 https://arxiv.org/abs/2012.11187](https://arxiv.org/abs/2012.11187)
- 8 Zhan, H., Weerasekera, C. S., **Bian, J.-W.**, & Reid, I. (2020). Visual odometry revisited: What should be learnt? In *International Conference on Robotics and Automation (ICRA)*. [🔗 doi:10.1109/ICRA40945.2020.9197374](https://doi.org/10.1109/ICRA40945.2020.9197374)
- 9 **Bian, J.-W.**, Li, Z., Wang, N., Zhan, H., Shen, C., Cheng, M.-M., & Reid, I. (2019). Unsupervised scale-consistent depth and ego-motion learning from monocular video. In *Neural Information Processing Systems (NeurIPS)*. Retrieved from [🔗 https://arxiv.org/abs/1908.10553](https://arxiv.org/abs/1908.10553)
- 10 **Bian, J.-W.**, Wu, Y.-H., Zhao, J., Liu, Y., Zhang, L., Cheng, M.-M., & Reid, I. (2019). An Evaluation of Feature Matchers for Fundamental Matrix Estimation. In *British Machine Vision Conference (BMVC)*. Retrieved from [🔗 https://arxiv.org/abs/1908.09474](https://arxiv.org/abs/1908.09474)
- 11 Liu, Y., Jiang, P.-T., Petrosyan, V., Li, S.-J., **Bian, J.-W.**, Zhang, L., & Cheng, M.-M. (2018). DEL: Deep Embedding Learning for Efficient Image Segmentation. In *International Joint Conference on Artificial Intelligence (IJCAI)*. [🔗 doi:10.24963/ijcai.2018/120](https://doi.org/10.24963/ijcai.2018/120)
- 12 **Bian, J.-W.**, Lin, W.-Y., Matsushita, Y., Yeung, S.-K., Nguyen, T.-D., & Cheng, M.-M. (2017). GMS: Grid-based motion statistics for fast, ultra-robust feature correspondence. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. [🔗 doi:10.1109/CVPR.2017.302](https://doi.org/10.1109/CVPR.2017.302)
- 13 Cheng, M.-M., Liu, Y., Hou, Q., **Bian, J.-W.**, Torr, P., Hu, S.-M., & Tu, Z. (2016). Hfs: Hierarchical feature selection for efficient image segmentation. In *European Conference on Computer Vision (ECCV)* (pp. 867–882). [🔗 doi:10.1007/978-3-319-46487-9_53](https://doi.org/10.1007/978-3-319-46487-9_53)

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