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Key Publications

(Limit to 20 key publications as first or corresponding author within the past six years, exclude review and comment articles)

Complete publication list: <https://scholar.google.com/citations?user=9MsdbKoAAAAJ&hl=en>

1. Lu, M.Y., Chen, B., Williamson, D.F., Chen, R.J., Ikamura, K., Gerber, G., Liang, I., Le, L.P., Ding, T., Parwani, A.V. and **Mahmood, F.***, 2024. A Multimodal Generative AI Copilot for Human Pathology. ***Nature***.
2. Song, A.H., Williams, M., Williamson, D.F., Chow, S.S., Jaume, G., Gao, G., Zhang, A., Chen, B., Baras, A.S., Serafin, R. and Colling, R., **Mahmood F.***, 2024. Analysis of 3D pathology samples using weakly supervised AI. ***Cell***.
3. Chen, R.J., Ding, T., Lu, M.Y., Williamson, D.F., Jaume, G., Song, A.H., Chen, B., Zhang, A., Shao, D., Shaban, M. and Williams, M., **Mahmood F.***, 2024. Towards a general-purpose foundation model for computational pathology. ***Nature Medicine***.
4. Lu, M.Y., Chen, B., Williamson, D.F., Chen, R.J., Liang, I., Ding, T., Jaume, G., Odintsov, I., Le, L.P., Gerber, G. and Parwani, A.V., **Mahmood F.***, 2024. A visual-language foundation model for computational pathology. ***Nature Medicine***.
5. Vaidya, A., Chen, R.J., Williamson, D.F., Song, A.H., Jaume, G., Yang, Y., Hartvigsen, T., Dyer, E.C., Lu, M.Y., Lipkova, J. and Shaban, M., **Mahmood F.***, 2024. Demographic bias in misdiagnosis by computational pathology models. ***Nature Medicine***.
6. Chen, R.J., Lu, M.Y., Williamson, D.F., Chen, T.Y., Lipkova, J., Noor, Z., Shaban, M., Shady, M., Williams, M., Joo, B. and **Mahmood, F.***, 2022. Pan-cancer integrative histology-genomic analysis via multimodal deep learning. ***Cancer Cell***.
7. Ming L.Y., Chen, T.Y., Williamson, D.F., Zhao, M., Shady, M., Lipkova, J. and **Mahmood, F.***, 2021. AI-based pathology predicts origins for cancers of unknown primary. ***Nature***.
8. Ozyoruk, K.B., Can, S., Darbaz, B., Başak, K., Demir, D., Gokceler, G.I., Serin, G., Hacisalihoglu, U.P., Kurtuluş, E., Lu, M.Y. and Chen, T.Y., **Mahmood, F.***, 2022. A deep-learning model for transforming the style of tissue images from cryosectioned to formalin-fixed and paraffin-embedded. ***Nature Biomedical Engineering***, 6(12), pp.1407-1419.
9. Lipkova, J., Chen, T.Y., Lu, M.Y., Chen, R.J., Shady, M., Williams, M., Wang, J., Noor, Z., Mitchell, R.N., Turan, M. and Coskun, G., **Mahmood, F.***, 2022. Deep learning-enabled assessment of cardiac allograft rejection from endomyocardial biopsies. ***Nature Medicine***.
10. Ming, L., Williamson, D.F., Chen, T.Y., Chen, R.J., Barbieri, M. and **Mahmood, F.***, 2021. Data- efficient and weakly supervised computational pathology on whole-slide images. ***Nature Biomedical Engineering***.

11. Chen, C., Lu, M.Y., Williamson, D.F., Chen, T.Y., Schaumberg, A.J. and **Mahmood, F.***, 2022. Fast and scalable search of whole-slide images via self-supervised deep learning. ***Nature Biomedical Engineering***.
12. Shaban, M., Bai, Y., Qiu, H., Mao, S., Yeung, J., Yeo, Y.Y., Shanmugam, V., Chen, H., Zhu, B., Weirather, J.L. and Nolan, G.P., Sizun J, **Mahmood F.*** 2024. MAPS: Pathologist-level cell type annotation from tissue images through machine learning. ***Nature Communications***, 15(1), p.28.
13. Chen, R.J., Chen, C., Li, Y., Chen, T.Y., Trister, A.D., Krishnan, R.G. and **Mahmood, F.***, 2022. Scaling vision transformers to gigapixel images via hierarchical self-supervised learning. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*.
14. Lu, M.Y., Chen, B., Zhang, A., Williamson, D.F., Chen, R.J., Ding, T., Le, L.P., Chuang, Y.S. and **Mahmood, F.***, 2023. Visual language pretrained multiple instance zero-shot transfer for histopathology images. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*.
15. Jaume, G., Vaidya, A., Chen, R.J., Williamson, D.F., Liang, P.P. and **Mahmood, F.***, 2024. Modeling dense multimodal interactions between biological pathways and histology for survival prediction. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*.
16. Song, A.H., Chen, R.J., Jaume, G., Vaidya, A.J., Baras, A. and **Mahmood, F.***, Multimodal Prototyping for cancer survival prediction. In *Forty-first International Conference on Machine Learning (ICML)*.
17. Chen, R.J., Chen, C., Li, Y., Chen, T.Y., Trister, A.D., Krishnan, R.G. and **Mahmood, F.***, 2022. Scaling vision transformers to gigapixel images via hierarchical self-supervised learning. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*.
18. Chen, R.J., Lu, M.Y., Weng, W.H., Chen, T.Y., Williamson, D.F., Manz, T., Shady, M. and **Mahmood, F.***, 2021. Multimodal co-attention transformer for survival prediction in gigapixel whole slide images. In *Proceedings of the IEEE/CVF international conference on computer vision (ICCV)*.
19. Jaume, G., Doucet, P., Song, A., Lu, M.Y., Almagro Pérez, C., Wagner, S., Vaidya, A., Chen, R., Williamson, D., Kim, A. and **Mahmood, F.***, 2024. Hest-1k: A dataset for spatial transcriptomics and histology image analysis. *Advances in Neural Information Processing Systems (NeurIPS)*.
20. Ding, T., Wagner, S.J., Song, A.H., Chen, R.J., Lu, M.Y., Zhang, A., Vaidya, A.J., Jaume, G., Shaban, M., Kim, A. and Williamson, D.F., 2024. Multimodal whole slide foundation model for pathology. ***Nature Medicine (accepted, to appear)***.