Xuan Gong

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Education

Ph.D., Computer Science and Engineering, *Sep 2019 - Aug 2023*
University at Buffalo, Buffalo, NY, US

Research Experience

Visiting Postdoctoral Scholar, Department of Genetics *April 2025 - Now*
Stanford Medicine, *Stanford, CA*
Topics: **Integrating omics and histopathology profiles for precision medicine**

Postdoctoral Research Fellow, Department of Biomedical Informatics *Sep 2023 - Now*
Harvard Medical School, *Boston, MA*
Topics: **Interpretable AI for cancer biology**

Research Intern, Google VR, *San Francisco, CA* *June 2023 - Sep 2023*
Topics: **Multiview consistent facial dense landmark detection**
- Differentiable triangulation for multiview consistency.

Research Intern, Alibaba DAMO Academy, *New York, NY* *Feb 2023 - May 2023*
Topics: **Esophageal cancer prognosis from PET/CT scans**
- Tumor and lymph nodes segmentation.
- Survival analysis with deep cox regression model.

Research Intern, Meta Reality Lab, *Redmond, WA* *Aug 2022 - Dec 2022*
Topics: **3D implicit modeling and synthesis of human eyes**
- Novel view eye image synthesis.
- Controllable eye-region animation with novel gaze and expression.

Part-time researcher, OPPO US Research Center, *Palo Alto, CA* *April 2022 - Aug 2022*
Topics: **Real-time 3D scene reconstruction from monocular video**
- Learning-based global TSDF fusion with sequential GRU.
- 4D space decomposition for efficient voxel modeling.

Part-time researcher, UII America, *Cambridge, MA* *May 2021 - Aug 2021*
Topics: **Synthetic training for 3D human mesh recovery**
- Render proxy representations (joints, IUV, depth, normal) with SMPL priors for self-supervised human mesh reconstruction.

Research Intern, UII America, *Cambridge, MA (remote)* *May 2020 - Aug 2020*
Topics: **Distillation based federated learning**
- Ensemble knowledge of distributed models with privacy-preserving distillation.
- Improve communication efficiency with one-shot knowledge distillation.

Publications

Conferences

- Mahesh Bhosale, Abdul Wasi, Shantam Srivastava, Shifa Latif, Tianyu Luan, Mingchen Gao, David Doermann, **Xuan Gong**. "FairLLaVA: Fairness-Aware Parameter-Efficient Fine-Tuning for Large Vision-Language Assistants". *CVPR*, 2026.

- Mahesh Bhosale, Abdul Wasi, Yuanhao Zhai, Yunjie Tian, Samuel Border, Nan Xi, Pinaki Sarder, Junsong Yuan, David Doermann, **Xuan Gong**. "PathDiff: Histopathology Image Synthesis with Unpaired Text and Mask Conditions". *ICCV*, 2025.
- Yuxuan Sun, Yixuan Si, Chenglu Zhu, **Xuan Gong**, Kai Zhang, Pingyi Chen, Ye Zhang, Zhongyi Shui, Tao Lin, Lin Yang. "CPath-Omni: a unified multimodal foundation model for patch and whole slide image analysis in computational pathology". *CVPR*, 2025.
- Yuxuan Sun, Yunlong Zhang, Yixuan Si, Chenglu Zhu, Kai Zhang, Zhongyi Shui, Jingxiong Li, **Xuan Gong**, Xinheng Lyu, Tao Lin, Lin Yang. "PathGen-1.6M: 1.6 million pathology image-text pairs generation through multi-agent collaboration". *ICLR*, 2025.
- **Xuan Gong***, Shanglin Li*, Yuxiang Bao*, Barry Yao, Yawen Huang, Ziyan Wu, Baochang Zhang, Yefeng Zheng, David Doermann, "Federated Learning via Input-Output Collaborative Distillation". *AAAI*, 2024.
- **Xuan Gong**, Liangchen Song, Meng Zheng, Benjamin Planche, Terrence Chen, Junsong Yuan, David Doermann, Ziyan Wu, "Progressive Multi-view Human Mesh Recovery with Self Supervision". *AAAI*, 2023. (oral, student travel award)
- Liangchen Song, **Xuan Gong**, Helong Zhou, Jiajie Chen, Qian Zhang, David Doermann, Junsong Yuan, "Exploring the Knowledge Transferred by Response-Based Teacher-Student Distillation". *ACM MM*, 2023.
- **Xuan Gong**, Abhishek Sharma, Srikrishna Karanam, Ziyan Wu, Terrence Chen, David Doermann, Arun Innanje, "Preserving Privacy in Federated Learning with Ensemble Cross-Domain Knowledge Distillation", *AAAI*, 2022. (graduate student scholarship)
- **Xuan Gong**, Meng Zheng, Benjamin Planche, Srikrishna Karanam, Terrence Chen, David Doermann, Ziyan Wu, "Self-supervised Human Mesh Recovery with Cross-Representation Alignment". *ECCV*, 2022.
- **Xuan Gong**, Luckyson Khaide, Wentao Zhu, Baochang Zhang, David Doermann, "Uncertainty Learning towards Unsupervised Deformable Medical Image Registration", *WACV*, 2022. (student travel award)
- Liangchen Song, **Xuan Gong**, Benjamin Planche, Meng Zheng, David Doermann, Junsong Yuan, Terrence Chen, Ziyan Wu, "PREF: Predictability Regularized Neural Motion Fields". *ECCV*, 2022. (oral)
- Meng Zheng, Benjamin Planche, **Xuan Gong**, Fan Yang, Terrence Chen, Ziyan Wu, "Self-supervised 3D Patient Modeling with Multi-modal Attentive Fusion", *MICCAI*, 2022. (early accept)
- **Xuan Gong**, Abhishek Sharma, Srikrishna Karanam, Ziyan Wu, Terrence Chen, David Doermann, Arun Innanje, "Ensemble Attention Distillation for Privacy-Preserving Federated Learning", *ICCV*, 2021.
- **Xuan Gong**, Shuyan Chen, Baochang Zhang, David Doermann, "Style Consistent Image Generation for Nuclei Instance Segmentation", *WACV*, 2021.
- **Xuan Gong***, Xin Xia*, Wentao Zhu, Baochang Zhang, David Doermann, Li'an Zhuo, "Deformable Gabor Feature Networks for Biomedical Image Classification", *WACV*, 2021.
- Hanlin Chen, Baochang Zhang, Song Xue, **Xuan Gong**, Hong Liu, Rongrong Ji, David Doermann, "Anti-Bandit Neural Architecture Search for Model Defense", *ECCV*, 2020.
- Junqin Huang, Xiang Xiang, **Xuan Gong**, Baochang Zhang, "Long-Short Graph Memory Network for Skeleton-based Action Recognition", *WACV*, 2020.

Journals

- **Xuan Gong**, Jiaqi Li, Yirui Wang, Haoshen Li, Jiawen Yao, Lianzhen Zhong, Dazhou Guo, Ke Yan, David Doermann, Le Lu, Feiran Jiao, Tsung-Ying Ho, Ling Zhang, Abudili Abuduxuku, Haifeng Wang, Xianghua Ye, Dakai Jin, Qifeng Wang, "Preoperative Prediction of Esophageal Cancer Survival in CT via Tumor and Lymph Node Context and Geometry Modeling". *IEEE Transactions on Medical Imaging*, 2026.

- **Xuan Gong**, Liangchen Song, Rishi Vedula, Abhishek Sharma, Meng Zheng, Benjamin Planche, Arun Innanje, Terrence Chen, Junsong Yuan, David Doermann, Ziyan Wu, "Federated Learning with Privacy-Preserving Ensemble Attention Distillation". *IEEE Transactions on Medical Imaging*, 2022.
- Song Xue, Hanlin Chen, Chunyu Xie, Baochang Zhang, **Xuan Gong**, David Doermann, "Fast and Unsupervised Neural Architecture Evolution for Visual Representation Learning", *IEEE Computational Intelligence Magazine*, 2021.

Professional Services

- **Conference Reviewer**:

Annual AAAI Conference on Artificial Intelligence (AAAI)	since 2024
Conference on Computer Vision and Pattern Recognition (CVPR)	since 2023
International Conference on Computer Vision (ICCV)	since 2023
International Conference on Learning Representations (ICLR)	since 2023
International Joint Conferences on Artificial Intelligence (IJCAI)	since 2023
European Conference on Computer Vision (ECCV)	since 2022
Winter Conference on Applications of Computer Vision (WACV)	since 2022

- **Journal Reviewer**:
  IEEE Transactions on Pattern Analysis and Machine Intelligence
  IEEE Transactions on Medical Imaging
  IEEE Transactions on Image Processing
  IEEE Journal of Biomedical and Health Informatics
  IEEE Transactions on Big Data
  Neural Computing and Applications

- **Instructor**:
  CSE573 Introduction to Computer Vision and Image Processing (University at Buffalo), Summer 2023.

- **Teaching Assistant**:
  CSE573 Introduction to Computer Vision and Image Processing (University at Buffalo), Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021.

Computer Skills

Python, C/C++, R, Matlab.