Xuan Gong

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EDUCATION		
	Ph.D., Computer Science and Engineering,	*Sep 2019 - Aug 2023*
	University at Buffalo, Buffalo, NY, US	
	M.E., Automation Science and Electrical Engineering,	*Sep 2014 - Jun 2017*
	Beihang University, Beijing, China	
	B.S., Astronautics,	*Sep 2010 - Jun 2014*
	Beihang University, Beijing, China	

RESEARCH
EXPERIENCE

Research Assistant, Artificial Intelligence Institute, University at Buffalo   *Sep 2019 - Now*
Advisor: Prof. David Doermann
- Federated learning: federated ensemble distillation.
- 3D vision: neural radiance fields, human mesh recovery, endoscopy scene reconstruction.
- Medical imaging: histopathology image synthesis, MRI deformable registration, cancer prognosis.

Research Intern, Alibaba DAMO Academy, *New York, NY*   *Feb 2023 - Now*
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.

Research Engineer, Huawei Technologies Co., Ltd., *Beijing, China*   *June 2017 - Aug 2019*
Topics: **Image denoising and style transfer**
- Conduct multi-frame image registration for noise reduction.
- Learn a bilateral network for affine color transform.

	Conferences

- **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)
- **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.
- 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, "Preserving Privacy in Federated Learning with Ensemble Cross-Domain Knowledge Distillation", *AAAI*, 2022. (graduate student scholarship)
- **Xuan Gong**, Luckyson Khaide, Wentao Zhu, Baochang Zhang, David Doermann, "Uncertainty Learning towards Unsupervised Deformable Medical Image Registration", *WACV*, 2022. (student travel award)
- **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**, 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.
- Wenyu Zhao, Teli Ma, **Xuan Gong**, Baochang Zhang, David Doermann, "A Review of Recent Advances of Binary Neural Networks for Edge Computing", *IEEE Journal on Miniaturization for Air and Space Systems*, 2020. |
| | - **Conference Reviewer**:
  Conference on Computer Vision and Pattern Recognition (CVPR) '2023
  European Conference on Computer Vision (ECCV) '2022
  International Conference on Computer Vision (ICCV) '2023
  International Conference on Learning Representations (ICLR) '2023
  International Joint Conferences on Artificial Intelligence (IJCAI) '2023
  Winter Conference on Applications of Computer Vision (WACV) '2022'2023 |

- **Journal Reviewer**:
  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

- **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.