Curriculum Vitae   Junzhou Huang, FAIMBE

Scalable Modeling & Imaging & Learning Lab
Dept. Computer Science & Engineering
The University of Texas at Arlington
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Google Scholar Profile

Research Interest

- Machine Learning, Computer Vision, Data Mining, Medical Image Analysis, Bioinformatics

Education

- **Rutgers, the State University of New Jersey, New Brunswick, NJ, USA**
  Ph.D. in Computer Science, June 2011
  Thesis: *Structured Sparsity: Theorems, Algorithms and Applications*
  Advisor: Dr. Dimitris Metaxas and Dr. Tong Zhang

- **University of Notre Dame, Notre Dame, IN, USA**
  Ph.D. Candidate in Computer Science and Engineering, 2004 - 2005

- **Institute of Automation, Chinese Academy of Sciences, Beijing, China**
  M.S. in Pattern Recognition and Intelligent Systems, June 2003
  Thesis: *Super Resolution Based Iris Image Enhancement*
  Advisor: Dr. Tieniu Tan

- **Huazhong University of Science and Technology, Wuhan, China**
  B.E. in Control Science and Engineering, June 1996

Professional Experience

- **The University of Texas at Arlington**
  2022 - now, Jenkins Garrett Professor
  2022 - now, Amazon Scholar
  2021 - now, Professor in Computer Science and Engineering
  2017 - 2021, On leave, Director of the Machine Learning Center at Tencent AI Lab
  2016 - 2021, Associate Professor in Computer Science and Engineering
  2011 - 2016, Assistant Professor in Computer Science and Engineering

- **Rutgers University**
  2005 - 2011, Research Assistant in Computer Science

- **Chinese Academy of Science**
  2003 - 2004, Research Assistant in the National Lab of Pattern Recognition

- **Industrial and Commercial Bank of China**
  1996 - 2000, Software Engineer

Award and Honor

- **Microsoft Accelerate Foundation Models Research Award**, Redmond, WA, January 2024.

- **Outstanding Research Record Award**, College of Engineering, the University of Texas at Arlington, 2023.

- **UT Rising STARs Award**, The University of Texas System, 2022.

- **Google TensorFlow Model Garden Award**, Mountain View, CA, October 2021.

- **6th Place Winner**, the 3D Structure Prediction Challenge in the 14th Community Wide Experiment on the Critical Assessment of Techniques for Protein Structure Prediction (CASP14), December 2020. (AlphaFold2 from Deepmind won the 1st place),

- **1st Place Winner**, the Contact and Distance Prediction Challenge in the 14th Community Wide Experiment on the Critical Assessment of Techniques for Protein Structure Prediction (CASP14), December 2020.

- **NSF CAREER Award**, National Science Foundation, 2016.

- **Best Student Paper Award**, the 18th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Munich, Germany, October 2015.

- **Best Student Paper Award Finalist**, the 17th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Boston, USA, September 2014.

- **Best Paper Award**, the 1st MICCAI Workshop on Sparsity Techniques in Medical Imaging (STMI), Nice, France, October 2012.

- **Young Scientist Award Finalist**, the 14th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Toronto, Canada, September 2011.

- **Best Paper Award**, the 6th International Conference on Functional Imaging and Modeling of the Heart (FIMH), New York, USA, May 2011.

- **Young Scientist Award**, the 13th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Beijing, China, September 2010.

- **IBM Watson Emerging Leaders in Multimedia and Signal Processing**, Awarded to 10 students internationally, NY, USA, 2010.

Grants (Total: $5.5M; PI: $4.5M)

1. "EAGER: Integrating Pathological Image and Biomedical Text Data for Clinical Outcome Prediction", **$200,000**, NSF IIS, $2024 - 2026$. (Role: **PI**).

2. "Developing Foundation Models for Survival Prediction from Pathological Image and Biomedical Text", **$70,000**, Microsoft Accelerate Foundation Models Research, 2024. (Role: **PI**).

3. "EAGER: Integrating Multi-Omics Biological Networks and Ontologies for lncRNA Function Annotation using Deep Learning", **$300,000**, NSF CCF, $2023 - 2025$. (Role: **PI**).

4. "Developing Knowledge-guided Deep Learning Models to Predict the Binding Between T Cell Receptors and Neoantigens for Facilitating TCR-T Therapies", **$1,199,997**, CPRIT, $2023 - 2026$. (Role: **MPI**).

5. Rising STARs Award, **$300,000**, The University of Texas System, 2022. (Role: **PI**).

6. Gift Fund for TensorFlow Model, **$20,000**, Google, Mountain View, CA, 2021. (Role: **PI**).

7. "Digital Pathology Analysis for Lung Cancer Patient Care", **$330,649**, CPRIT, $2019 - 2022$. (Role: **PI**).

8. Gift Fund for Deep Graph Learning Research, **$150,000**, XtaiPi, Boston, 2018. (Role: **PI**).

9. "RI: Small: Collaborative Research: A Topological Analysis of Uncertainly Representation in the Brain", **$499,992**, NSF IIS, $2017 - 2021$. (Role: **PI**).

10. "RAPID: Collaborative: Data Driven Post-Disaster Waste and Debris Volume Predictions Using Smartphone Photogrammetry App and Unmanned Aerial Vehicles", **$34,137**, NSF CNS, $2017 - 2018$. (Role: **Co-PI**).

11. "CAREER: Large Scale Learning for Complex Image-Omics Data Analytics", **$535,763**, NSF IIS, $2016 - 2022$. (Role: **PI**).

12. "III: Small: Collaborative Research: Robust Materials Genome Data Mining Framework for Prediction and Guidance of Nanoparticle Synthesis", **$500,000**, NSF IIS, $2014 - 2018$. (Role: **PI**).

13. "CMMI:Statistics-based Optimization Methods for Adaptive Interdisciplinary Pain Management", **$374,998**, NSF CMMI, $2014 - 2017$. (Role: **Co-PI**).

14. "CRI: A Spatiotemporal Annotated Human Activity Repository for Advanced Motion Recognition and Analysis Research", **$116,000**, NSF CRI, $2014 - 2017$. (Role: **Co-PI**).

15. "Learning Fine-grained Digital Map for Autonomous Driving", **$136,058**, Nokia Research America, $2014 - 2016$. (Role: **PI**).

16. Gift Fund for Highly Automated Driving Map, **$50,000**, HERE Map Research, 2014. (Role: **PI**).

17. "Energy Disaggregation for Non-intrusive Load Monitoring", **$149,998**, Samsung Research America, $2013 - 2016$. (Role: **PI**).

18. "GAANN: Educating Health Informatics Researchers", **$533,064**, Department of Education, 2012-2017 (Role: **Co-PI**)

Teaching Experience

- *Undergraduate Courses*
  - CSE 2312 Computer Organization and Assembly Language Programming
  - Semesters: Fall 2011 - Spring 2015
  - Average of Student Evaluation Scores: **4.2/5.0**

- *Graduate Courses*
  - CSE 6392 Advanced Topics in Scalable Learning and Optimization
  - Semesters: Spring 2012 - present
  - Average of Student Evaluation Scores: **4.5/5.0**

  - CSE 5311 Design and Analysis of Algorithms
  - Semesters: Fall 2015 - present
  - Average of Student Evaluation Scores: **4.2/5.0**

Advising and Mentoring

- **Ph.D Students**
  - Yeqing Li (2012-2016, next stop: Google)
  - Zheng Xu (2014-2018, next stop: Google)
  - Jiawen Yao (2014-2019, next stop: PAII)
  - Ruoyu Li (2014-2020, next stop: Facebook)
  - Sheng Wang (2015-2020, next stop: Google)
  - Xinliang Zhu (2015-2020, next stop: Amazon)
  - Mohammad Minhazul Haq (2016-2023, next stop: PostDoc)
  - Ashwin Raju (2017-2022, next stop: Covera Health)
  - Chaochao Yan (2017-2022, next stop: Google)
  - Jinyu Yang (2018-2022, next stop: Amazon)
  - Yuzhi Guo (2018-2022, next stop: PostDoc)
  - Hehuan Ma (2018-2023, next stop: PostDoc; Female)
  - Chunyuan Li (Start: Fall 2019; Female)
  - Weizhi An (Start: Fall 2019; Female)
  - Saiyang Na (Start: Fall 2021)
  - Wenliang Zhong (Start: Fall 2021)
  - Feng Jiang (Start: Fall 2022)
  - Yuwei Miao (Start: Fall 2022; Female)
  - Qifeng Zhou (Start: Fall 2022)

- **Master Students with Thesis (11)**
  - Chen Chen (01/2012 - 01/2015, next stop: UIUC)
  - Dheeraj Ganti (09/2014 - 01/2016, next stop: Oracle)
  - Viswanathan Rajalingam (01/2015 - 01/2017, next stop: Samsung Lab)
  - Vivek Balaji (01/2015 - 01/2017, next stop: BMW)
  - Shirong Xue (09/2015 - 07/2017, next stop: Walmart Lab)
  - Ashwin Raju (09/2015 - 07/2017, next stop: UTA PhD)
  - Arjun Vekariya (09/2015 - 07/2017, next stop: Raizlabs)
  - Xiaoyu Zhang (09/2017 - 12/2018, next stop: UTA PhD)

- Zhifei Deng (08/2016 - 12/2019, next stop: Facebook)
- Siyu Xiu (06/2018 - 01/2020, next stop: FutureDial; Female)
- Zeheng Li (09/2018 - 05/2021, next stop: CoCoPIE LLC; Female)

- **Undergraduate**
  - John Maynard, Fall 2013
  - Pragya Neupane, Fall 2014 (Female)
  - Himank Yadav, Fall 2014
  - Ogenna Esimai, Spring 2015 (Female)

- **PostDocs and Visiting Scholars (8)**
  - Hao Pan, Beijing Institute of Petrochemical Technology, 2014 - 2015
  - Longwen Gao, Fudan University, 2014 - 2015
  - Xiaoming Li, Zhejiang Sci-Tech University, 2015 - 2016
  - Xiaoyan Wei, Hubei University of Economics, 2015 - 2016
  - Benxin Zhang, Guilin University of Electronic Technology, 2016 - 2017
  - Liu Yang, Central South University, 2017 - 2018
  - Feiyun Zhu, Walmart Lab, 2016 - 2018
  - Ying Li, Communication University of China, 2019 - 2020.

Publication

Invited Book Chapters

1. [Bookchapter'23] Junzhou Huang and Ruoyu Li, "Adaptive Graph Convolutional Neural Network and Its Biomedical Applications", *State of the Art in Neural Networks and Their Applications Volume 2*, ISBN: 9780128198728, Elsevier, January 2023.

2. [Bookchapter'22a] Junzhou Huang, Xinliang Zhu, Jiawen Yao, "Training a Deep Multiview Model Using Small Samples of Medical Data", *Artificial Intelligence in Cancer Diagnosis and Prognosis, Volume 1: Lung and kidney cancer*, IOP Publishing, 2022.

3. [BookChapt'22] Hehuan Ma, Yu Rong, Junzhou Huang, "Graph Neural Networks: Scalability", *Graph Neural Networks: Foundations, Frontiers, and Applications*, Springer, 2022.

4. [BookChapt'20] Junzhou Huang and Ruoyu Li, "Fast Regions-of-Interest Detection in Whole Slide Histopathology Images", *Histopathology and Liquid Biopsy*, IntechOpen, 2020.

5. [BookChapt'17] Junzhou Huang, Zheng Xu, "Accelerated Cell Detection with Sparse Convolution Kernels", *Deep Learning and Convolutional Neural Networks for Medical Image Computing*, ISBN: 9783319429984, Springer, 2017

6. [BookChapt'16] Junzhou Huang, Yeqing Li, "Advanced Sparsity Techniques in Magnetic Resonance Imaging", *Machine Learning and Medical Imaging*, ISBN: $978-0-12-804076-8$, Elsevier Press, 2016.

7. [BookChapt'14] Junzhou Huang, Chen Chen and Xinyi Cui, "Sparsity Driven Background Modeling and Foreground Detection", book chapter, *Handbook on Background Modeling and Foreground Detection for Video Surveillance*, CRC Press, 2014.

8. [BookChapt'10] Tian Shen, Shaoting Zhang, Junzhou Huang, Xiaolei Huang and Dimitris Metaxas, Integrating Shape and Texture in 3D Deformable Models: From Metamorphs to Active Volume Models, book chapter, to appear in *Multi Modality State-of-the-Art Medical Image Segmentation and Registration Methodologies*, Volume I, Chapter 1, A.S. El-Baz, R. Acharya U, and M. Mirmehdi (Editors), Springer, March 2011.

Peer-reviewed Journal Papers

1. [BBio'24] Feng Jiang, Yuzhi Guo, Hehuan Ma, Saiyang Na, Wenliang Zhong, Yi Han, Tao Wang and Junzhou Huang, "GTE: A Graph Learning Framework for Prediction of T-cell Receptors and Epitopes Binding Specificity", *Briefings in Bioinformatics*, Major Revision.

2. [BioMed'24] Weizhi An, Yuzhi Guo, Yatao Bian, Hehuan Ma, Jinyu Yang, Chunyuan Li and Junzhou Huang, "Advancing DNA Language Models through Motif-Oriented Pre-training with MoDNA", *Biomedinformatics*, Major Revision.

3. [NN'24] Kaili Ma, Han Yang, Shanchao Yang, Kangfei Zhao, Lanqing Li, Yongqiang Chen, Junzhou Huang, James Cheng and Yu Rong, "Solving the Non-Submodular Network Collapse Problems via Decision Transformer", *Neural Networks*, To Appear.

4. [TNNLS'24a] Mingcai Chen, Yu Zhao, Bing He, Zongbo Han, Junzhou Huang, Bingzhe Wu, Jianhua Yao, "Learning with Noisy Labels over Imbalanced Subpopulations", *IEEE Transactions on Neural Networks and Learning Systems*, To Appear.

5. [TNNLS'24] Jiaqi Han, Wenbing Huang, Yu Rong, Tingyang Xu, Fuchun Sun and Junzhou Huang, "Structure-Aware DropEdge Towards Deep Graph Convolutional Networks". *IEEE Transactions on Neural Networks and Learning Systems*, To Appear.

6. [JBC'24] Hehuan Ma, Feng Jiang, Yuzhi Guo and Junzhou Huang, Towards Robust Self-training for Molecular Biology Prediction Tasks, *Journal of Computational Biology*, To Appear.

7. [Bioinfor'24] Jiahan Liu, Chaochao Yan, Chan Lu, Junzhou Huang, Le Ou-Yang and Zhao, Peilin, "MARS: A Motif-based Autoregressive Model for Retrosynthesis Prediction", *Bioinformatics*, To Appear.

8. [TPAMI'24a] Wenbing Huang, Yu Rong, Tingyang Xu, Fuchun Sun and Junzhou Huang, "Tackling Over-Smoothing for General Graph Convolutional Networks", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Major Revision.

9. [TPAMI'24] Junchi Yu, Tingyang Xu, Yu Rong, Yatao Bian, Junzhou Huang, Ran He, "Recognizing Predictive Substructures with Subgraph Information Bottleneck", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 46, pp. 1650-1663, March 2024.

10. [BPEE'23] Shiwei Zhou, Jinyu Yang, Krishna Konduri, Junzhou Huang, Lifeng Yu and Mingwu Jin, "Spatiotemporal Denoising of Low-dose Cardiac CT Image Sequences using RecycleGAN", *Biomedical Physics & Engineering Express*, Volume 9, September 2023.

11. [CRT'23] Yuwei Miao, Hehuan Ma and Junzhou Huang, "Recent Advances in Toxicity Prediction: Applications of Deep Graph Learning." *Chemical Research in Toxicology*, Volume 36, pp. 1206-1226, August 2023.

12. [TMLR'23] Xuefeng Du, Tian Bian, Yu Rong, Bo Han, Tongliang Liu, Tingyang Xu, Wenbing Huang, Yixuan Li and Junzhou Huang, "Noise-robust Graph Learning by Estimating and Leveraging Pairwise Interactions", *Transactions on Machine Learning Research*, June 2023.

13. [TKDE'23a] Heng Chang, Yu Rong, Tingyang Xu, Wenbing Huang, Honglei Zhang, Peng Cui, Xin Wang, Wenwu Zhu and Junzhou Huang, "Adversarial Attack Framework on Graph Embedding Models with Limited Knowledge", *IEEE Transactions on Knowledge and Data Engineering*, Volume: 35, Issue: 5, pp. 4499-4513, May 2023.

14. [MedIA'23b] Xiyue Wang, Jun Zhang, Sen Yang, Jingxi Xiang, Feng Luo, Minghui Wang, Jing Zhang, Wei Yang, Junzhou Huang and Xiao Han, "A Generalizable and Robust Deep Learning Algorithm for Mitosis Detection in Multicenter Breast Histopathological Images", *Medical Image Analysis*, Volume 84, February 2023.

15. [Frontier'23] Mohammad Minhazul Haq, Hehuan Ma and Junzhou Huang, "NuSegDA: Domain Adaptation for Nuclei Segmentation", *Frontiers in Big Data-Medicine and Public Health*, Volume 6, February 2023.

16. [MedIA'23a] Wenhua Zhang, Jun Zhang, Xiyue Wang, Sen Yang, Junzhou Huang, Wei Yang, Wenping Wang and Xiao Han, "Merging Nucleus Datasets by Correlation-based Cross-Training", *Medical Image Analysis*, Volume 84, February 2023.

17. [TKDE'23] Kangfei Zhao, Zhiwei Zhang, Yu Rong, Jeffrey Yu and Junzhou Huang, "Finding Critical Users in Social Communities via Graph Convolutions", *IEEE Transactions on Knowledge and Data Engineering*, Volume: 35, Issue: 1, pp. 456-468, January 2023.

18. [TPAMI'23] Zhen Peng, Minnan Luo, Wenbing Huang, Jundong Li, Qinghua Zheng, Fuchun Sun and Junzhou Huang, "Learning Representations by Graphical Mutual Information Estimation and Maximization", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 45, Issue 1, pp. 722-737, January 2023.

19. [MedIA'23] Xiyue Wang, Yuexi Du, Sen Yang, Jun Zhang, Minghui Wang, Jing Zhang, Wei Yang, Junzhou Huang and Xiao Han, "RetCCL: Clustering-guided Contrastive Learning for Whole-slide Image Retrieval", *Medical Image Analysis*, Volume 83, January 2023.

20. [JBC'23] Chaochao Yan, Jinyu Yang, Hehuan Ma and Junzhou Huang, "Molecule Sequence Generation with Rebalanced Variational Loss", *Journal of Computational Biology*, Volume 30, Issue 1, January 2023.

21. [TMI'22] Wenhua Zhang, Jun Zhang, Sen Yang, Xiyue Wang, Wei Yang, Junzhou Huang, Wenping Wang and Xiao Han, "Knowledge-Based Representation Learning for Nucleus Instance Classification from Histopathological Images", *IEEE Transactions on Medical Imaging*, Volume 41, Issue 12, pp. 3939-3951, December 2022.

22. [GPB'22] Sen Yang, Tao Shen, Yuqi Fang, Xiyue Wang, Jun Zhang, Wei Yang, Junzhou Huang and Xiao Han, "DeepNoise: Signal and Noise Disentanglement based on Classifying Fluorescent Microscopy Images via Deep Learning", *Genomics, Proteomics and Bioinformatics*, Volume 20, Issue 5, pp. 989-1001, October 2022.

23. [TPAMI'22b] Yong Guo, Yin Zheng, Mingkui Tan, Qi Chen, Zhipeng Li, Jian Chen, Peilin Zhao and Junzhou Huang, "Towards Accurate and Compact Architectures via Neural Architecture Transformer", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 44, Issue 10, pp. 6501-6516, October 2022.

24. [TPAMI'22c] Runhao Zeng, Wenbing Huang, Mingkui Tan, Yu Rong, Peilin Zhao, Junzhou Huang and Chuang Gan, "Graph Convolutional Module for Temporal Action Localization in Videos", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 44, Issue 10, pp. 6209-6223, October 2022.

25. [TNNLS'22] Lu Wang, Lei Han, Xinru Chen, Chengchang Li, Junzhou Huang, Weinan Zhang, Wei Zhang, Xiaofeng He and Dijun Luo, "Hierachical Multi-Agent Reinforcement Learning for Allocating Guaranteed Display Ads", *IEEE Transactions on Neural Networks and Learning Systems*, Volume 33, Issue 10, pp. 5361-5373, October 2022.

26. [MedIA'22] Xiyue Wang, Sen Yang, Jun Zhang, Minghui Wang, Jing Zhang, Wei Yang, Junzhou Huang and Xiao Han, "Transformer-based Unsupervised Contrastive Learning for Histopathological Image Classification", *Medical Image Analysis*, Volume 81, October 2022.

27. [NatureMI'22] Fan Yang, Wenchuan Wang, Fang Wang, Yuan Fang, Duyu Tang, Junzhou Huang, Hui Lu and Jianhua Yao, "scBERT as a Large-scale Pretrained Deep Language Model for Cell Type Annotation of Single-cell RNA-seq Data", *Nature Machine Intelligence*, Volume 4, pp. 852-866, September 2022.

28. [Biomolecules'22a] Chaochao Yan, Peilin Zhao, Chan Lu, Yang Yu and Junzhou Huang, "Retro-Composer: Composing Templates for Template-based Retrosynthesis Prediction", *Biomolecules*, Volume 12, September 2022.

29. [SR'22] Piumi Sandarenu, Ewan KA Millar, Yang Song, Lois H Browne, Julia Beretov, Jodi Lynch, Peter Graham, Jitendra Jonnagaddala, Nick Hawkins, Junzhou Huang and Erik Meijering, "Survival Prediction in Triple Negative Breast Cancer Using Multiple Instance Learning of Histopathological Images", *Scientific Reports*, Volume 12, August 2022.

30. [TPAMI'22a] Jing Liu, Bohan Zhuang, Zhuangwei Zhuang, Yong Guo, Junzhou Huang, Jinhui Zhu and Mingkui Tan, "Discrimination-aware Channel Pruning for Deep Model Compression", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 44, Issue 8, pp. 4035-4051, August 2022.

31. [Elife'22] Darshana Narayanan, Daniel Takahashi, Lauren Kelly, Sabina Hlavaty, Junzhou Huang and Asif Ghazanfar, "Prenatal Development of Neonatal Vocalizations", *Elife*, Volume 11, July 2022.

32. [JChem'22] Xiaochu Tong, Dingyan Wang, Xiaoyu Ding, Xiaoqin Tan, Qun Ren, Geng Chen, Yu Rong, Tingyang Xu, Junzhou Huang, Hualiang Jiang, Mingyue Zheng and Xutong Li, "BloodBrain Barrier Penetration Prediction Enhanced by Uncertainty Estimation", *Journal of Cheminformatics*, Volume 14, Number 44, July 2022.

33. [CMS'22] Qifeng Bai, Shuo Liu, Yanan Tian, Tingyang Xu, Antonio Jess Banegas-Luna, Horacio Prez-Snchez, Junzhou Huang, Huanxiang Liu and Xiaojun Yao, "Application Advances of Deep Learning Methods for De Novo Drug Design and Molecular Dynamics Simulation", *WIREs Computational Molecular Science*, Volume 12, Issue 3, June 2022.

34. [FrontOncol'22] Xiaoying Lou, Niyun Zhou, Lili Feng, Zhenhui Li, Yuqi Fang, Xinjuan Fan, Yihong Ling, Hailing Liu, Xuan Zou, Jing Wang, Junzhou Huang, Jingping Yun, Jianhua Yao and Yan Huang, "Deep Learning Model for Predicting the Pathological Complete Response to Neoadjuvant Chemoradiotherapy of Locally Advanced Rectal Cancer", *Frontiers in Oncology*, Volume 12, June 2022.

35. [Biomolecules'22] Yuzhi Guo, Jiaxiang Wu, Hehuan Ma, Sheng Wang and Junzhou Huang, "Deep Ensemble Learning with Atrous Spatial Pyramid Networks for Protein Secondary Structure Prediction", *Biomolecules*, Volume 12, 774, June 2022.

36. [PR'22] Junchi Yu, Tingyang Xu, Yu Rong, Junzhou Huang and Ran He, "Structure-aware Conditional Variational Auto-Encoder for Constrained Molecule Optimization", *Pattern Recognition*, Volume 126, June 2022.

37. [Bioinfor'22a] Xiaohan Xing, Fan Yang, Hang Li, Jun Zhang, Yu Zhao, Mingxuan Gao, Junzhou Huang and Jianhua Yao, "Multi-Level Attention Graph Neural Network Based on Co-expression Gene Modules for Disease Diagnosis and Prognosis", *Bioinformatics*, Volume 38, Issue 8, pp. 2178-2186, April 2022.

38. [Bioinfor'22] Hehuan Ma, Yatao Bian, Yu Rong, Wenbing Huang, Tingyang Xu, Weiyang Xie, Geyan Ye and Junzhou Huang, "Cross-Dependent Graph Neural Networks for Molecular Property Prediction", *Bioinformatics*, Volume 38, Issue 7, pp. 2003-2009, April 2022.

39. [BME'22] Hailing Liu, Yu Zhao, Fan Yang, Xiaoying Lou, Feng Wu, Hang Li, Xiaohan Xing, Tingying Peng, Bjoern Menze, Junzhou Huang, Shujun Zhang, Anjia Han, Jianhua Yao and Xinjuan Fan, "Preoperative Prediction of Lymph Node Metastasis in Colorectal Cancer with Deep Learning", *BME Frontiers*, Volume 2022, pp. 1-12, March 2022.

40. [TPAMI'22] Jiezhang Cao, Yong Guo, Qingyao Wu, Chunhua Shen, Junzhou Huang and Mingkui Tan, "Improving Generative Adversarial Networks with Local Coordinate Coding", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 44, Issue 1, pp. 211-227, January 2022.

41. [PROTEINS'21] Tao Shen, Jiaxiang Wu, Haidong Lan, Liangzhen Zheng, Jianguo Pei, Sheng Wang, Wei Liu and Junzhou Huang, "When Homologous Sequences Meet Structural Decoys: Accurate Contact Prediction by tFold in CASP14", *PROTEINS: Structure, Function, and Bioinformatics*, Volume 89(12), pp. 1901-1910, December 2021.

42. [NN'21] Shuaicheng Niu, Jiaxiang Wu, Yifan Zhang, Yong Guo, Peilin Zhao, Junzhou Huang, Mingkui Tan, "Disturbance-immune weight sharing for neural architecture search", Neural Networks, Volume 144, pp. 553-564, December 2021.

43. [Neuro'21] Kelong Mao, Xi Xiao, Tingyang Xu, Yu Rong, Junzhou Huang and Peilin Zhao, "Molecular Graph Enhanced Transformer for Retrosynthesis Prediction", *Neurocomputing*, Volume 457, pp. 193-202, October 2021.

44. [OMEGA'21] Yang Yu, Tingyang Xu, Jiawen Li, Yaping Qiu, Yu Rong, Zhen Gong, Xuemin Cheng, Liming Dong, Wei Liu, Jin Li, Dengfeng Dou* and Junzhou Huang*, "A Novel Scalarized Scaffold Hopping Algorithm with Graph-based Variational Autoencoder for Discovery of JAK1 Inhibitors", *ACS Omega*, Volume 6, Issue 35, pp. 22945-22954, August 2021. (* Co-corresponding)

45. [VA'21] Meng Yue, Jun Zhang, Xinran Wang, Kezhou Yan, Lijing Cai, Kuan Tian, Shuyao Niu, Xiao Han, Yongqiang Yu, Junzhou Huang, Dandan Han, Jianhua Yao, Yueping Liu, "Can AI-assisted Microscope Facilitate Breast HER2 Interpretation? A Multi-institutional Ring Study", Virchows Archiv, 479, pp. 443C449, July 2021.

46. [CSBJ'21] Qifeng Bai, Jian Ma, Shuo Liu, Tingyang Xud, Antonio Jess Banegas-Luna, Horacio Prez-Snchez, Yanan Tian, Junzhou Huang, Huanxiang Liu and Xiaojun Yao, "WADDAICA: A Webserver for Aiding Protein Drug Design by Artificial Intelligence and Classical Algorithm", *Computational and Structural Biotechnology Journal*, Volume 19, pp. 3573-3579, June 2021.

47. [TKDE'21] Yifan Zhang, Peilin Zhao, Shuaicheng Niu, Qingyao Wu, Jiezhang Cao, Junzhou Huang, Mingkui Tan, "Online Adaptive Asymmetric Active Learning with Limited Budgets", *IEEE Transactions on Knowledge and Data Engineering*, Volume 33, Issue 6, June 2021.

48. [NPJBC'21] Yueping Liu, Xinran Wang, Liang Wang, Hong Bu, Ningning Zhang, Meng Yue, Zhanli Jia, Lijing Cai, Jiankun He, Yanan Wang, Xin Xu, Shengshui Li, Kaiwen Xiao, Kezhou Yan, Kuan Tian, Xiao Han, <u>Junzhou Huang</u> and Jianhua Yao, "How Can Artificial Intelligence Models Assist PD-L1 Expression Scoring in Breast Cancer: Results of Multi-institutional Ring Studies", *NPJ Breast Cancer* **7**, 61, Volume 7, Issue 1, May 2021.

49. [JCB'21] Yuzhi Guo, Jiaxiang Wu, Hehuan Ma, Sheng Wang and <u>Junzhou Huang</u>, "EPTool: A New Enhancing PSSM Tool for Protein Secondary Structure Prediction", *Journal of Computational Biology*, Volume 28, Number 4, April 2021.

50. [JCB'21a] Yuzhi Guo, Jiaxiang Wu, Hehuan Ma, Sheng Wang and <u>Junzhou Huang</u>, "Comprehensive Study of Bagging MSA Learning for Protein Structure Property Prediction", *Journal of Computational Biology*, Volume 28, Number 4, April 2021.

51. [HISTOP'21] Lijing Cai, Kezhou Yan, Hong Bu, Meng Yue, Pei Dong, Xinran Wang, Lina Li, Kuan Tian, Haocheng Shen, Jun Zhang, Jiuyan Shang, Shuyao Niu, Dandan Han, Chen Ren, <u>Junzhou Huang</u>, Xiao Han, Jianhua Yao, Yueping Liu, "Improving Ki-67 Assessment Concordance with AI-Empowered Microscope: A Multi-institutional Ring Study", *Histopathology*, April 2021.

52. [TRPMS'21] Zeheng Li, Shiwei Zhou, <u>Junzhou Huang</u>, Lifeng Yu and Mingwu Jin, "Investigation of Low-Dose CT Image Denoising Using Unpaired Deep Learning Methods", *IEEE Transactions on Radiation and Plasma Medical Sciences*, Volume 5, Issue 2, March 2021.

53. [CRT'21] Hehuan Ma, Weizhi An, Yuhong Wang, Hongmao Sun, Ruili Huang and <u>Junzhou Huang</u>, "Deep Graph Learning with Property Augmentation for Predicting Drug-Induced Liver Injury", *Chemical Research in Toxicology*, Volume 34, Issue 2, pp. 495-506, February 2021.

54. [IJCV'21] Peng Sun, Jiaxiang Wu, Songyuan Li, Peiwen Lin, <u>Junzhou Huang</u> and Xi Li, "Real-Time Semantic Segmentation via Auto Depth, Downsampling Joint Decision and Feature Aggregation", *International Journal of Computer Vision*, Volume 129, pp.1506-1525, February 2021.

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24. [STMI'12b] Chen Chen, Junzhou Huang, "The Benefit of Tree Sparsity in Accelerated MRI", In *The MICCAI Workshop on Sparsity Techniques in Medical Imaging*, STMI'12, Nice, France, October 2012. **(Oral Presentation)** **(Best Paper Award)**

25. [STMI'12a] Chen Chen, Junzhou Huang and Leon Axel, "Accelerated Parallel Magnetic Resonance Imaging with Joint Gradient and Wavelet Sparsity", In *MICCAI Workshop on Sparsity Techniques in Medical Imaging*, STMI'12, Nice, France, October 2012.

26. [MeshMed'12] Xinyi Cui, Shaoting Zhang, Yiqiang Zhan, Mingchen Gao, Junzhou Huang and Dimitris Metaxas, "3D Anatomical Shape Atlas Construction using Mesh Quality Preserved Deformable Models", In *MICCAI Workshop on Mesh Processing in Medical Image Analysis*, MeshMed'12, Nice, France, October 2012.

27. [SPIE'10] Shaoting Zhang, Junzhou Huang, Wei Wang, Xiaolei Huang, Dimitris Metaxas, "Cervigram Image Segmentation Based On Reconstructive Sparse Representations", In *Proc. of SPIE, Medical Imaging: Image Processing*, SPIE'10, San Diego, California, USA, February 2010. **(Oral Presentation)**

28. [MIAAB'06] Junzhou Huang, Xiaolei Huang, Dimitris Metaxas, Debarata Banerjee, "3D Tumor Shape Reconstruction from 2D Bioluminescence Images and Registration with CT Images", In *The 1st Workshop on Microscopic Image Analysis with Applications in Biology*, MIAAB'06, Washington DC, USA, April 2006. **(Oral Presentation)**

Patent

1. A New Algorithm for MRI Reconstruction, US8548218B2, October 2013.

2. Method and Apparatus for Multiple Image Registration in the Gradient domain, US9466108B1, October 2016

3. Method, Apparatus and Computer Program Product for Robust Image Registration Based on Deep Sparse Representation, US20170026630A1, January 2017

4. Method and Apparatus for Image Registration in the Gradient Domain, US9582882B2, February 2017

5. Pathologic Microscope, Display Module, Control Method and Apparatus, and Storage Medium, US20200409134A1, December 2020

6. Method and Apparatus for Identifying Heterogeneous Graph and Property of Molecular Space Structure and Computer Device, US20210043283A1, February 2021

7. Methods, Apparatus, and Storage Medium for Classifying Graph Nodes, US20210142108A1, May 2021

8. Method for Training Object Detection Model and Target Object Detection Method, US20210192180A1, June 2021

9. Protein Structure Information Prediction Method and Apparatus, Device, and Storage medium, US20220093213A1, March 2022.

10. Drug Screening Method and Apparatus, and Electronic Device, US20220415433A1, December 2022.

Invited Talks

- "3D Tumor Shape Reconstruction from 2D Bioluminescence Images", IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Washington, USA, April 2006.

- "Optimization and Learning for Registration of Moving Dynamic Textures", International Conference on Computer Vision, Rio de Janeiro, Brazil, October 2007.

- "Learning with Structure Sparsity", International Conference on Machine Learning, Montreal, Canada, June 2009.

- "Learning with Dynamic Group Sparsity", International Conference on Computer Vision, Kyoto, Japan, October 2009.

- "Sparse Learning and Beyonds", Institute of Computing Technology, Chinese Academy of Science, Beijing, China, November 2009.

- "Structure Sparsity for Compressive Sensing", Institute of Electronics, Chinese Academy of Science, Beijing, China, November 2009.

- "Structured Sparsity and Its Applications on Biomedical Imaging and Computer Vision", Siemens Corporate Research, Princeton, NJ, USA, August 2010.

- "Sparse Learning for Biomedical Imaging and Informatics", Siemens Medical Solutions, Malvern, PA, USA, August 2010.

- "Structure Sparsity for Dynamic Data Analysis", ExxonMobil Corporate Strategic Research, Clinton, NJ, USA, September 2010.

- "Efficient MR Image Reconstruction for Compressed MR Imaging", 13th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, Beijing, China, September 2010.

- "Structured Sparsity and Its Applications", 6th Annual Watson Workshop Emerging Leaders in Multimedia and Signal Processing, Hawthorne NY, USA, October, 2010.

- "Structured Sparsity and Its Applications on Medical Imaging and Machine Vision", Department of Computer Science and Engineering, University of Texas at Arlington, TX, USA, March 2011.

- "Sparsity: From Theory to Applications in Machine Learning and Medical Imaging", Department of Computer Science, Illinois Institute of Technology, Chicago, IL, USA, March 2011.

- "Sparsity Techniques and Their Applications", NAVTEQ, Chicago, IL, USA, April 2011.

- "Sparsity and Deformable Models for Improved Medical Imaging and Diagnosis", SPIE on Wavelets and Sparsity XIV, San Diego, CA, USA, August 2011.

- "Fast Composite Splitting Algorithm for Linear Composite Regularization", SIAM Conference on Imaging Science, Philadelphia, PA, USA, May 2012.

- "Structured Sparsity: When Statistical Learning Met Signal Processing", Department of Electrical Engineering, University of Texas at Arlington, TX, USA, April 2012.

- "Biomedical Imaging and Learning: When Statistical Learning Met Bio-Applications", Department of Bioengineering, University of Texas at Arlington, TX, USA, August 2012.

- "Low-frequency Energy Disaggregation", Samsung Research America, Dallas, TX, USA, March 2013.

- "$\mathcal{O}(1)$ Algorithms for Overlapping Group Sparsity", INFORMS Optimization Society Conference, Houston, TX, USA, March 2014.

- "Multichannel Compressed Sensing with Forest Sparsity", SIAM Conference on Optimization, San Diego, CA, USA, May 2014.

- "Preconditioning for Accelerated Iteratively Reweighted Least Squares in Structured Sparsity Reconstruction", IEEE Conference on Computer Vision and Pattern Recognition, Columbus, Ohio, USA, June 2014.

- "Recent Algorithm Development in Diffusion Optical Imaging", Department of Bioengineering, University of Texas at Arlington, TX, USA, September 2014.

- "Big Image-Omics Data Analytics for Clinical Outcome Prediction", Department of Clinical Science, University of Texas Southwestern Medical Center, Dallas, TX, USA, November 2015.

- "Integration of Pathological Images and Cell Profiling Data for Clinical Outcome Prediction", National Center for Advancing Translational Sciences, National Institutes of Health, Bethesda, Maryland, USA, January 2016.

- "Biomarker Discovery from Histopathology Images for Clinical Outcome Prediction", Radiology and Imaging Sciences, National Institutes of Health, Bethesda, Maryland, USA, June 2016.

- "Multi-modal Biomarker Discovery from Imaging Genomic Data", School of Medicine, University of Maryland, Baltimore, USA, June 2016.

- "Big Imaging-Genomics Data Analytics for Clinical Outcome Prediction", CVPR Workshop on Medical Computer Vision, Las Vegas, USA, July 2016.

- "Clinical Imaging Biomarker Discovery for Survival Prediction on Lung Cancer Imaging Genetic Data", the 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, Athens, Greece, October 2016.

- "Sparse Learning for Big Medical Data", Department of Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX, USA, April 2017.

- "Big Image-Omics Data Analytics for Clinical Outcome Prediction", GPU Technology Conference, Silicon Valley, May 2017.

- "Survival Prediction from Whole Slide Histopathology Images", MICCAI PC Meeting, Quebec City, Quebec, Canada, May 2017.

- "Deep Learning Based Survival Prediction from Big Image-Omics Data", Medical Computer Vision Workshop, Honolulu, Hawaii, USA, July 2017.

- "Deep Graph Learning on Biomedical Data", MICCAI AC Meeting, Shenzhen, Guangdong, China, June 2019.

- "Application of Artificial Intelligence in Medtech and Life Science", West Lake University, June 2020.

- "Deep Graph Learning: Foundations, Advances and Applications", The 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD'20, San Diego, CA, USA, August 2020.

- "Machine Learning: From Concepts to Applications in Biomedicine", Department of Bioengineering, University of Texas at Arlington, TX, USA, September 2020.

- "How Machine Learning Helps to Better Triage COVID-19 Patients?", IEEE InTech: A Forum on the Response and Resiliency to COVID-19, USA, December 2020.

- "Advanced Deep Graph Learning: Deeper, Faster, Robuster, Unsupervised", The 30th Web Conference, WWW'21, Ljubljana, Slovenia, April 2021.

- "Deep Graph Learning for Drug Property Prediction", College of Science and Engineering, University of Minnesota, November 2021.

- "Trustworthy Graph Learning: Reliability, Explainability, and Privacy Protection", The 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD'22, Washington DC, USA, August 2022.

- "Deep Learning on Graphs and Its Applications", Department of Computer Science and Engineering, Texas A&M University, November 2022.

- "Deep Learning for Protein Structure Modeling: Current Progress and Open Challenges", Experimental Therapeutics Research Program AlphaFold Retreat, University of Texas Southwestern Medical Center, Dallas, TX, USA, February 2023.

- "Curriculum Graph Poisoning", International World Wide Web Conference, WWW'23, Austin, Texas, USA, May 2023.

- "Learning on Graphs and Its Applications", Department of Radiation Oncology, University of Texas Southwestern Medical Center, Dallas, TX, USA, March 2024.

Professional Activities

- **Editorial Board**
  Journal of Visual Communication and Image Representation, 2016 - Present
  Journal of Machine Intelligence Research, 2020 - Present
  IEEE Transactions on Medical Imaging, 2022 - Present

- **Area/Session Chair**
  The Annual International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2015, 2017, 2019, 2021, 2022
  The AAAI Conference on Artificial Intelligence (AAAI), 2017, 2021, 2022, 2023, 2024
  The ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2020, 2021
  The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022
  The IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024
  The International Conference on Machine Learning (ICML), 2022, 2023, 2024
  The Annual Conference on Neural Information Processing Systems (NeurIPS), 2022, 2023

- **Grant Panel Member and Reviewer**
  National Science Foundation, Smart and Connected Health, 2015 - present
  National Science Foundation, Small Business Innovation Research, 2015 - present
  National Science Foundation, Information Integration and Informatics, 2015 - present
  National Science Foundation, Cyberinfrastructure for Sustained Scientific Innovation, 2022 - present
  National Science Foundation, Biological Infrastructure, Molecular and Cellular Biosciences, 2023 - present

- **Outreach Activity**
  Annual Guest Speakers and Demo Demonstration
  Summer Camp for Middle School Students, Arlington, 2013 - present
  Summer Camp for Middle School Girls, Arlington, 2013 - present

- **Department and University Service**
  Member of the Ph.D. Admission Committee, (2012-2014), CSE, UTA.
  Member of the Visiting Appointments Committees (2014-2020), CSE, UTA.
  Member of the Quality Assurance Committees (2014-2020), CSE, UTA.
  Member of the Searching Committees for the Nooyi Endowed Chair, 2020, BE, UTA
  Member of FDL and REP Recognition Committees (2020-2024), CSE, UTA
  Member of the Graduate Curriculum Committees (2020-2024), CSE, UTA
  Member of the Research Committees (2021-2024), College of Engineering, UTA
  Chair of the Research Committees (2022-2023), College of Engineering, UTA

Citation

- **Google Scholar Citations until April 22, 2024**

  – Total Citations: **26,602**
  – H-index: **82**
  – I10-index: **278**
  – Web http://scholar.google.com/citations?user=X7KrguAAAAAJ&hl=en