

CURRICULUM VITAE

Zongwei Zhou, PhD

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Born: Shaoxing, Zhejiang, China
Date of Birth: 03 December 1993
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Education

From	To	Degree	Institution and Location	Field of Study
08/2017	05/2021	Ph.D.	Arizona State University, USA	Biomedical Informatics
09/2012	06/2016	B.Sc.	Dalian University of Technology, China	Computer Science

Awards and Honors

2022 AMIA Doctoral Dissertation Award
2022 MICCAI Young Scientist Publication Impact Award Finalist
2022 IEEE TMI Distinguished Reviewer
2020 Co-PI, Bridges AI Problem (135,360 GPU hours, 12,000 GB Storage); PI: J. Liang
2020 Elsevier-MedIA Best Paper Award
2020 MICCAI Student Participation Award
2020 First places in Annual Student Poster Competition, BMI/BMD Symposium
2020 University Graduate Fellowship, Arizona State University
2019 MICCAI Young Scientist Award
2019 MICCAI Best Presentation Award Finalist
2019 MICCAI Graduate Student Travel Award
2019 First place in the Annual Student Poster Competition, Mayo Clinic Symposium
2016 Outstanding Graduate, Dalian University of Technology

Employment, Research, and Academic Positions

2021- Postdoctoral Researcher, Johns Hopkins University, Baltimore, MD, USA
2018 Research Intern, Centre Hospitalier de l'Université de Montréal, Montreal, Canada
2017 Research Intern, Mayo Clinic, Rochester, MN, USA

Professional Memberships

2022- North American Training/Student Membership
2021- Student Member, Association for Computing Machinery (ACM)
2021- Member, American Medical Informatics Association (AMIA)
2017- Young Professionals, the Institute of Electrical and Electronics Engineers (IEEE)
2017- Student Member, the Institute of Electrical and Electronics Engineers (IEEE)

Professional Services

Guest Editor

Special Issue in Sensors: “Advances of Deep Learning in Medical Image Interpretation”
Special Issue in J. Imaging: “Imaging Informatics for Computer-Aided Diagnosis”

Journal Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Neural Networks and Learning Systems
Medical Image Analysis
Information Fusion
IEEE Transactions on Medical Imaging
Pattern Recognition
Computer Methods and Programs in Biomedicine
IEEE Transactions on Biomedical Engineering
Journal of Biomedical and Health Informatics
IEEE Access
Journal of Biomedical Informatics

Workshop Co-Organizer

ICML’22 Workshop on Interpretable Machine Learning in Healthcare (IMLH), Baltimore, USA

Conference Program Committee

IEEE International Symposium on Biomedical Imaging (ISBI’23), Cartagena, Colombia
Conference on Computer Vision and Pattern Recognition (CVPR’23), Vancouver, Canada
AAAI Conference on Artificial Intelligence (AAAI’23), Washington DC, USA
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV’23), Hawaii, USA
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI’22), Singapore
Conference on Computer Vision and Pattern Recognition (CVPR’22), New Orleans, USA
AAAI Conference on Artificial Intelligence (AAAI’22), Vancouver, Canada
ICCV’21 Workshop on Computer Vision for Automated Medical Diagnosis (CVAMD), Montreal, Canada
International Conference on Computer Vision (ICCV’21), Montreal, Canada
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI’21), Strasbourg, France
AAAI Conference on Artificial Intelligence (AAAI’21), Vancouver, Canada
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI’20), Lima, Peru
AAAI Conference on Artificial Intelligence (AAAI’20), New York, USA
ICCV’19 Workshop on Visual Recognition for Medical Images (VRMI), Seoul, Korea

Invited Talks

11/26/2022	Synthetic Tumors Make AI Segment Real Tumors Better Venue: Du’Shu Forum/The 2nd Youth Academic Forum, Host: Dr. S. Kevin Zhou
11/07/2022	Towards Annotation-Efficient Deep Learning for Computer-Aided Diagnosis Venue: AMIA 2022 Annual Symposium, Host: Dr. Jeffrey J. Williamson
11/05/2021	Imaging Informatics: Computer-Aided Diagnosis with Annotation-Efficient Deep Learning. Venue: Biomedical Informatics (BMI) Seminar, Host: Dr. Anita Murcko
10/01/2021	Data Assemble: Towards Efficient Medical Image Analysis Venue: MICCAI 2021 FLARE Challenge Keynote, Host: Dr. Jun Ma
08/03/2021	Towards Annotation-Efficient Deep Learning for Computer-Aided Diagnosis

04/26/2021	Venue: Medical Image Computing Seminar (MICS), Host: Dr. Hongkai Wang Towards Annotation-Efficient Deep Learning for Computer-Aided Diagnosis
01/28/2021	Venue: DLML Journal Club @Mayo Clinic, Host: Cindy Dilworth The Will of Computer Vision
12/06/2020	Venue: VALSE Student Webinar, Host: Dr. Yong Xia Cost-Effective Deep Learning in Medical Image Analysis
11/06/2020	Venue: Arizona Physiological Society's (AZPS) Annual Meeting, Host: Dr. Dawn Coletta Annotation-efficient Deep Learning for Computer-aided Diagnosis in Medical Imaging
09/04/2020	Venue: CIDSE Invited Talk @Arizona State University, Host: Dr. Yalin Wang Computer-aided Diagnosis and Therapy in Medical Imaging
08/13/2020	Venue: BMI Seminar @Arizona State University, Host: Dr. Anita Murcko Cost-Effective Computer-Aided Diagnosis of Lung Cancer in Chest Computed Tomography
11/11/2019	Venue: Phoenix Symposium on Data Analytics in Healthcare, Host: Dr. Claire Pascavis Models Genesis: Generic Autodidactic Models for 3D Medical Image Analysis
10/24/2019	Venue: Mila – Quebec Artificial Intelligence Institute, Host: Dr. Joseph Paul Cohen 3D Transfer Learning in Medical Image Analysis
09/24/2019	Venue: AI Research Club Models Genesis: Generic Autodidactic Models for 3D Medical Image Analysis
09/18/2018	Venue: MICS Webinar, Host: Dr. Yong Xia, Dr. Huiguang He UNet++: A Nested U-Net Architecture for Medical Image Segmentation
05/22/2018	Venue: AI Research Club How to Cut Annotation Cost in Biomedical Imaging
	Venue: Centre Hospitalier de l'Université de Montréal, Host: Dr. Catherine Huet

Teaching

2021	BMI 505: Foundations of BMI Methods II Position: Teaching Assistant, Instructor: Dr. Sen Peng
2020	BMI 598: NLP Methods for Biomedical Text Mining Position: Teaching Assistant, Instructor: Dr. Murthy Devarakonda
2020	BMI 598: Imaging in Diagnostics Position: Teaching Assistant, Instructor: Dr. Jianming Liang
2019	BMI 507: Intro Digital Image Processing Position: Teaching Assistant, Instructor: Dr. Jianming Liang

Student Supervision

Haoyue Guan	Johns Hopkins University (Master Student), 2022-
Xinyi Li	Johns Hopkins University (Master Student), 2022-
Huimiao Chen	Johns Hopkins University (Master Student), 2022-
Nengyu Chen	Johns Hopkins University (Master Student), 2022-
Shiyi Du	Sichuang University (Undergraduate), 2022-
Wei Ji	University of Alberta (PhD Student), 2022-
Yu-Cheng Chou	Wuhan University (Undergraduate), 2022-
Qixin Hu	Huazhong University of Science and Technology (Master Student), 2022-
Yixiong Chen	Fudan University (Undergraduate), 2022-
Zengle Zhu	Tongji University (Undergraduate), 2022-
Shuojue Yang	Johns Hopkins University (Master Student), 2022-
Jie Liu	City University of Hong Kong (PhD Student), 2022
Junfei Xiao	Johns Hopkins University (PhD Student), 2022-
Yixiao Zhang	Johns Hopkins University (PhD Student), 2022-
Tiange Xiang	University of Sydney (Undergraduate), 2021-
Liangyu Chen	Nanyang Technological University (Undergraduate), 2021-22
Mintong Kang	Zhejiang University (Undergraduate), 2021-22

Patents

- 2021 US Patent 11,164,021, Methods, Systems, and Media for Discriminating and Generating Translated Images
- 2021 US Patent 11,164,067, Systems, Methods, and Apparatuses for Implementing a Multi-resolution Neural Network for Use with Imaging Intensive Applications Including Medical Imaging

Publications

*Corresponding author

Book Chapters

1. **Z. Zhou**, V. Sodha, S. Bajpai, J. Pang, M. Gotway, J. Liang*. "Models Genesis." In Deep Learning for Medical Image Analysis (2nd Edition). S. K. Zhou, H. Greenspan, D. Shen (eds.). Springer.
2. **Z. Zhou**, M. Gotway, J. Liang*. "Interpreting Medical Images." Intelligent Systems in Medicine and Health: The Role of AI. T. Cohen, V. Patel and E. Shortliffe (eds.). Springer Nature, 2022.

Peer-refereed Journal Publications

3. **Z. Zhou**, J. Shin, S. Gurudu, M. Gotway, and J. Liang*. "Active, Continual Fine Tuning of Convolutional Neural Networks for Reducing Annotation Efforts." Medical Image Analysis, 2021.
4. F. Haghighi, M. R. Hosseinzadeh Taher, **Z. Zhou**, M. Gotway, J. Liang*. "Transferable Visual Words: Exploiting the Semantics of Anatomical Patterns for Self-supervised Learning." IEEE Transactions on Medical Imaging, 2021.
5. **Z. Zhou**, V. Sodha, J. Pang, M. Gotway, and J. Liang*. "Models Genesis." Medical Image Analysis, 2020. ([MedIA Best Paper Award](#))
6. **Z. Zhou**, M. M. Rahman Siddiquee, N. Tajbakhsh, and J. Liang*. "UNet++: Redesigning Skip Connections to Exploit Multi-Resolution Features in Image Segmentation." IEEE Transactions on Medical Imaging, 2020. ([IEEE TMI Most Popular Articles](#))
7. **Z. Zhou**, J. Shin, R. Feng, R. Hurst, C. Kendall, and J. Liang*. "Integrating Active Learning and Transfer Learning for Carotid Intima-Media Thickness Video Interpretation." Journal of Digital Imaging, 2019.
8. H. Wang, Z. Chen, **Z. Zhou**, Y. Li, P. Lu, W. Wang, W. Liu, L. Yu*. "Evaluation of Machine Learning Classifiers for Diagnosing Mediastinal Lymph Node Metastasis of Lung Cancer from PET/CT Images." Journal of Zhejiang University (Engineering Science), 2018
9. H. Wang, **Z. Zhou**, Y. Li, Z. Chen, P. Lu, W. Wang, W. Liu, and L. Yu*. "Comparison of Machine Learning Methods for Classifying Mediastinal Lymph Node Metastasis of Non-Small Cell Lung Cancer from 18 F-FDG PET/CT Images." EJNMMI Research, 2017. ([EJNMMI Research Highest-Cited Article, 2017-18](#))

Peer-refereed Conference Proceedings

10. L. Chen, Y. Bai, S. Huang, Y. Lu, B. Wen, A. Yuille, **Z. Zhou***. "A Guide to Your First Choice: Addressing Cold Start Problem in Vision Active Learning." NeurIPS Workshop on Human in the Loop Learning, 2022.
11. Q. Hu, J. Xiao, Y. Chen, S. Sun, J. Chen, A. Yuille, **Z. Zhou***. "Synthetic Tumors Make AI Segment Tumors Better". NeurIPS Workshop on Medical Imaging Meets NeurIPS, 2022. (Oral Presentation)
12. Z. Zhu, M. Kang, A. Yuille, **Z. Zhou***. "Leveraging Existing Labels from Public Datasets for Novel Diseases: Identifying COVID-19 in Late 2019". NeurIPS Workshop on Medical Imaging Meets NeurIPS, 2022.
13. J. Xiao, Y. Bai, Y. Zhang, A. Yuille, **Z. Zhou***. "Delving into Masked Autoencoders for Multi-Label Chest X-ray Classification." Winter Conference on Applications of Computer Vision (WACV'23), 2023.
14. J. Xiao, L. Yu, **Z. Zhou**, Y. Bai, L. Xing, A. Yuille, Y. Zhou*. "CateNorm: Categorical Normalization for Robust Medical Image Segmentation." Domain Adaptation and Representation Transfer (DART'22), 2022. ([Best Paper Award Honorable Mention](#), Oral Presentation)
15. J. Xiao, L. Jing, L. Zhang, J. He, Q. She, **Z. Zhou**, A. Yuille, Y. Li*. "Learning from Temporal Gradient for Semi-supervised Action Recognition." Conference on Computer Vision and Pattern Recognition (CVPR'22), 2022.
16. Y. Yao, F. Liu, **Z. Zhou**, Y. Wang, W. Shen, A. Yuille, Y. Lu*. "Unsupervised Domain Adaptation through Shape Modeling for Medical Image Segmentation." Medical Imaging with Deep Learning (MIDL'22), 2022.

17. N. Islam, S. Gehlot, **Z. Zhou**, M. Gotway, J. Liang*. "Seeking an Optimal Approach for Computer-Aided Diagnosis Pulmonary Embolism Detection." Machine Learning in Medical Imaging (MLMI'21), 2021. (Oral Presentation)
18. R. Feng, **Z. Zhou**, M. Gotway, J. Liang*. "Self-supervised Learning: From Parts to Whole." Domain Adaptation and Representation Transfer (DART'20), 2020. (Oral Presentation)
19. F. Haghighi, M. R. Hosseinzadeh Taher, **Z. Zhou**, M. Gotway, J. Liang*. "Learning Semantics-enriched Representation via Self-discovery, Self-classification, and Self-restoration." International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI'20), 2020. (Oral Presentation)
20. M. M. Rahman Siddiquee, **Z. Zhou**, R. Feng, N. Tajbakhsh, M. Gotway, Y. Bengio, and J. Liang*. "Learning Fixed Points in Generative Adversarial Networks: From Image-to-Image Translation to Disease Detection and Localization." International Conference on Computer Vision (ICCV'19), 2019.
21. **Z. Zhou**, V. Sodha, M. M. Rahman Siddiquee, R. Feng, N. Tajbakhsh, M. Gotway, and J. Liang*. "Models Genesis: Generic Autodidactic Models for 3D Medical Image Analysis." International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI'19), 2019. (Young Scientist Award; Young Scientist Publication Impact Award Finalist; Oral Presentation)
22. **Z. Zhou**, M. M. Rahman Siddiquee, N. Tajbakhsh, and J. Liang*. "UNet++: A Nested U-Net Architecture for Medical Image Segmentation." Deep Learning in Medical Image Analysis (DLMIA'18), 2018. (Oral Presentation)
23. **Z. Zhou**, J. Shin, L. Zhang, S. Gurudu, M. Gotway, and J. Liang*. "Fine-tuning Convolutional Neural Networks for Biomedical Image Analysis: Actively and Incrementally." Conference on Computer Vision and Pattern Recognition (CVPR'17), 2017.

Peer-refereed Conference Abstracts

24. J. Xiao, Y. Bai, A. Yuille, **Z. Zhou***. "Transforming Radiograph Imaging with Transformers: Comparing Vision Transformers with Convolutional Neural Networks in Multi-Label Thorax Disease Classification." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
25. Z. Zhu, M. Kang, A. Yuille, **Z. Zhou***. "Assembling and Exploiting Large-scale Existing Labels of Common Thorax Diseases for Improved COVID-19 Classification Using Chest Radiographs." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
26. Y. Chou, D. Fan, A. Yuille, **Z. Zhou***. "Determining Effective and Efficient Annotation Strategies to Curate Large-scale Colonoscopy Video Datasets for Polyp Detection." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
27. S. Yang, B. Li, F. Liu, J. Chen, ..., E. Fishman, A. Yuille, **Z. Zhou***. "Pancreatic Ductal Adenocarcinoma (PDAC) Detection Using Per-Slice Annotation." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
28. Y. Xia, Q. Yu, L. Chu, S. Kawamoto, ..., **Z. Zhou**, ..., B. Vogelstein, A. Yuille, E. Fishman*. "AI Algorithms Can Assist Radiologists in Early Detection of Pancreatic Neoplasms Through Venous and Arterial CT Imaging." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
29. Y. Xia, Q. Yu, L. Chu, S. Kawamoto, ..., **Z. Zhou**, ..., B. Vogelstein, A. Yuille, E. Fishman*. "Generalizing AI Algorithms to Abdominal CT Scans Taken from Different Hospitals for Pancreatic Ductal Adenocarcinoma Detection." Radiological Society of North America (RSNA), 2022. (Oral Presentation)
30. **Z. Zhou**, Z. Akkus, M. S. Warner, M. N. Stan, J. Liang, and B. J. Erickson*. "A Preliminary Study of Using Machine Learning to Reduce Biopsies of Thyroid Nodules Based on Ultrasound Images." The 2nd SIIM Conference on Machine Intelligence in Medical Imaging, 2017.
31. P. D. Korfiatis, **Z. Zhou**, J. Liang, and B. J. Erickson*. "Fully Automated IDH Mutation Prediction in MRI Utilizing Deep Learning." The 2nd SIIM Conference on Machine Intelligence in Medical Imaging, 2017.
32. **Z. Zhou**, J. Shin, R. T. Hurst, C. B. Kendall, and J. Liang*. "Integrating Active Learning and Transfer Learning for Carotid Intima-Media Thickness Video Interpretation." The 2nd SIIM Conference on Machine Intelligence in Medical Imaging, 2017.
33. L. Zhang, **Z. Zhou**, H. Siddiki, N. S. Madiraju, F. C. Ramirez, S. R. Gurudu, and J. Liang*. "Approaching Medical Fellow-Level Performance on Colonoscopy Frame Classification with Deep Neural Networks." WP Time, the 82rd Annual Meeting, 2017.

Preprints

34. T. Xiang, Y. Zhang, Y. Lu, A. Yuille, C. Zhang, W. Cai, **Z. Zhou***. "Deep Feature In-painting for Unsupervised Anomaly Detection in X-ray Images." arXiv preprint arXiv:2111.13495, 2021. In Submission: Conference on Computer Vision and Pattern Recognition (CVPR'23), 2023.
35. M. Kang, B. Li, Z. Zhu, Y. Lu, E. Fishman, A. Yuille, X. Li, **Z. Zhou***. "Label-Assemble: Leveraging Partial Labels from An Assembly of Data on Hand." arXiv preprint arXiv:2109.12265, 2021. In Submission: IEEE International Symposium on Biomedical Imaging (ISBI'23), 2023.
36. Y. Xia, Q. Yu, L. Chu, S. Kawamoto, ..., **Z. Zhou**, ..., B. Vogelstein*, A. Yuille*, E. Fishman*. "The Felix Project: Deep Networks To Detect Pancreatic Neoplasms". medRxiv, 2022
37. J. Chen, J. Chen, **Z. Zhou**, A. Yuille, Y. Lu*. "MT-TransUNet: Mediating Multi-Task Tokens in Transformers for Skin Lesion Segmentation and Classification." arXiv preprint arXiv:2112.01767, 2021.

References

Alan L. Yuille	Bloomberg Distinguished Professor, Johns Hopkins University; ayuille1@jhu.edu
Jianming Liang	Associate Professor, Arizona State University; Jianming.Liang@asu.edu
Edward H. Shortliffe	Chair Emeritus & Adjunct Professor, Columbia University; ted@shortliffe.net
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