



Yongkai Liu

Postdoctoral Scholar, Radiology

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BIO

Dr. Yongkai Liu is a postdoctoral scholar at Stanford's Center for Advanced Functional Neuroimaging, led by Drs. Greg Zaharchuk and Michael Moseley. His interests lie in developing and evaluating advanced techniques for improving treatment decision-making and prognostics in brain diseases, especially stroke, using imaging and deep learning.

Before joining Stanford, he earned a Ph.D. from UCLA, majoring in Physics and Biology in Medicine, under the supervision of Prof. Kyung Sung. This gave him a solid foundation in medicine, deep learning, and physics. His Ph.D. thesis, titled "Advancing Segmentation and Classification Methods in Magnetic Resonance Imaging via Artificial Intelligence," focused on the development of advanced deep learning and machine learning techniques specifically for MRI-based clinical applications. During his master's degree, he studied CT Virtual Colonoscopy under the supervision of Prof. Jerome Liang. In addition, he served as a reviewing editor for Frontiers in Oncology and as a peer reviewer for several critical journals in medical imaging, such as IEEE Transactions on Medical Imaging (TMI), Medical Physics, IEEE Transactions on Radiation and Plasma Medical Sciences, and IEEE Transactions on Biomedical Engineering.

Dr. Liu is an emerging leader in neuroimaging, stroke, and AI, earning widespread recognition for his work. His being named a recipient of the 2024 David M. Yousem Research Fellow Award and a semi-finalist for the 2024 Cornelius G. Dyke Award from the American Society of Neuroradiology underscores his potential to make significant future contributions. (<https://med.stanford.edu/rsl/news/yongkai-liu-receives-research-fellow-award.html>)

HONORS AND AWARDS

- David M. Yousem Research Fellow Award, American Society of Neuroradiology (2024)
- semi-finalist for the 2024 Cornelius G. Dyke Award, American Society of Neuroradiology (2024)

PROFESSIONAL EDUCATION

- Master of Engineering, Tsinghua University (2017)
- Doctor of Philosophy, University of California Los Angeles (2022)

STANFORD ADVISORS

- Greg Zaharchuk, Postdoctoral Faculty Sponsor

LINKS

- LinkedIn: <https://www.linkedin.com/in/yongkai-liu/>
- Twitter: https://twitter.com/Focus_on_aca
- Google Scholar: <https://scholar.google.com/citations?user=9nPt8pcAAAAJ&hl=en>

Publications

PUBLICATIONS

- **A Clinical and Imaging Fused Deep Learning Model Matches Expert Clinician Prediction of 90-Day Stroke Outcomes.** *AJNR. American journal of neuroradiology*
Liu, Y., Shah, P., Yu, Y., Horsey, J., Ouyang, J., Jiang, B., Yang, G., Heit, J. J., McCullough-Hicks, M. E., Hugdal, S. M., Wintermark, M., Michel, P., Liebeskind, et al
2024
- **Random expert sampling for deep learning segmentation of acute ischemic stroke on non-contrast CT.** *Journal of neurointerventional surgery*
Ostmeier, S., Axelrod, B., Liu, Y., Yu, Y., Jiang, B., Yuen, N., Pulli, B., Verhaaren, B. F., Kaka, H., Wintermark, M., Michel, P., Mahammedi, A., Federau, et al
2024
- **Non-inferiority of deep learning ischemic stroke segmentation on non-contrast CT within 16-hours compared to expert neuroradiologists.** *Scientific reports*
Ostmeier, S., Axelrod, B., Verhaaren, B. F., Christensen, S., Mahammedi, A., Liu, Y., Pulli, B., Li, L., Zaharchuk, G., Heit, J. J.
2023; 13 (1): 16153
- **Functional Outcome Prediction in Acute Ischemic Stroke Using a Fused Imaging and Clinical Deep Learning Model.** *Stroke*
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2023
- **Evaluation of Spatial Attentive Deep Learning for Automatic Placental Segmentation on Longitudinal MRI** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Liu, Y., Zabihollahy, F., Yan, R., Lee, B., Janzen, C., Devaskar, S., Sung, K.
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- **Multiparametric MRI-based radiomics model to predict pelvic lymph node invasion for patients with prostate cancer** *EUROPEAN RADIOLOGY*
Zheng, H., Miao, Q., Liu, Y., Mirak, S., Hosseiny, M., Scalzo, F., Raman, S. S., Sung, K.
2022
- **Deep Learning Enables Prostate MRI Segmentation: A Large Cohort Evaluation With Inter-Rater Variability Analysis** *FRONTIERS IN ONCOLOGY*
Liu, Y., Miao, Q., Suraweck, C., Zheng, H., Nguyen, D., Yang, G., Raman, S. S., Sung, K.
2021; 11: 801876
- **Textured-Based Deep Learning in Prostate Cancer Classification with 3T Multiparametric MRI: Comparison with PI-RADS-Based Classification** *DIAGNOSTICS*
Liu, Y., Zheng, H., Liang, Z., Miao, Q., Brisbane, W. G., Marks, L. S., Raman, S. S., Reiter, R. E., Yang, G., Sung, K.
2021; 11 (10)
- **Integrative Machine Learning Prediction of Prostate Biopsy Results From Negative Multiparametric MRI** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Zheng, H., Miao, Q., Liu, Y., Raman, S. S., Scalzo, F., Sung, K.
2022; 55 (1): 100-110
- **ME-Net: Multi-encoder net framework for brain tumor segmentation** *INTERNATIONAL JOURNAL OF IMAGING SYSTEMS AND TECHNOLOGY*
Zhang, W., Yang, G., Huang, H., Yang, W., Xu, X., Liu, Y., Lai, X.
2021; 31 (4): 1834-1848
- **3D PBV-Net: An automated prostate MRI data segmentation method** *COMPUTERS IN BIOLOGY AND MEDICINE*
Jin, Y., Yang, G., Fang, Y., Li, R., Xu, X., Liu, Y., Lai, X.
2021; 128: 104160
- **Exploring Uncertainty Measures in Bayesian Deep Attentive Neural Networks for Prostate Zonal Segmentation** *IEEE ACCESS*
Liu, Y., Yang, G., Hosseiny, M., Azadikhah, A., Mirak, S., Miao, Q., Raman, S. S., Sung, K.
2020; 8: 151817-151828
- **Automatic Prostate Zonal Segmentation Using Fully Convolutional Network With Feature Pyramid Attention** *IEEE ACCESS*
Liu, Y., Yang, G., Afshari Mirak, S., Hosseiny, M., Azadikhah, A., Zhong, X., Reiter, R. E., Lee, Y., Raman, S. S., Sung, K.
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- **Haustral loop extraction for CT colonography using geodesics** *INTERNATIONAL JOURNAL OF COMPUTER ASSISTED RADIOLOGY AND SURGERY*
Liu, Y., Duan, C., Liang, J., Hu, J., Lu, H., Luo, M.
2017; 12 (3): 379-388