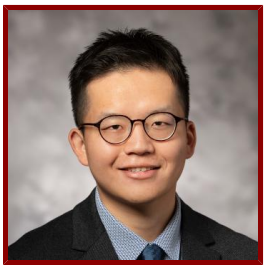
Stanford



Dongrong Yang

- Affiliate, Department Funds
- Fellow in Radiation Oncology

Bio

BIO

Dongrong Yang, PhD, is a medical physics resident in the Department of Radiation Oncology at Stanford University. His research interests lie at the intersection of artificial intelligence and radiation oncology, with a particular focus on foundation-model agents, automated radiation therapy treatment planning, human–AI collaboration, clinical decision support, and personalized radiation therapy. Dr. Yang received his PhD and MS in Medical Physics from Duke University and his BS in Materials Physics from Nanjing University. He conducted undergraduate research at the University of Freiburg in Germany and completed a clinical and research exchange at National Cancer Centre Singapore and Duke-NUS Medical School. His honors include the AAPM/RSNA Doctoral Graduate Fellowship and two American Society for Radiation Oncology Best in Physics awards.

HONORS AND AWARDS

- Annual Meeting Travel Award, American Society for Radiation Oncology (ASTRO) (2025)
- Best in Physics, American Society for Radiation Oncology (ASTRO) (2025)
- Duke and Duke-NUS Medical School Research Exchange Program Award, Duke University (2024)
- AAPM/RSNA Doctoral Graduate Fellowship, American Association of Physicists in Medicine (AAPM) (2023)
- Best in Physics, American Society for Radiation Oncology (ASTRO) (2022)
- Dean’s Research Awards for Master’s Students, Duke University (2022)
- Thesis Research Fellowship, Duke University (2022)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Association of Physicists in Medicine (AAPM) (2021 - present)
- Associate Member, SIGMA XI (2024 - present)
- Member, American Society for Radiation Oncology (ASTRO) (2021 - present)
- Member, American College of Radiology (ACR) (2021 - present)

PROFESSIONAL EDUCATION

- PhD, Duke University , Medical Physics (2026)
- MS, Duke University , Medical Physics (2023)
- BS, Nanjing University , Materials Physics (2020)

Publications

PUBLICATIONS

- **Reference-Free large language model agents for physician-guided radiotherapy treatment planning.** *Medical physics*
  Yang, D., Wu, X., Xie, Y., Li, X., Wu, Q., Wu, Q. J., Sheng, Y.
  2026; 53 (8): e70592

- **Illusion of convergence: Search space geometry in radiotherapy treatment plan optimization.** *Medical physics*
  Wu, X., Yang, D., Sheng, Y., Ge, Y., Wu, Q. J., Wu, Q.
  2026; 53 (1): e70209

- **Enhanced 4D diffusion-weighted PROPELLER echo-planar imaging with collaborative blade reconstruction.** *Physics in medicine and biology*
  Wang, L., Li, T., Liu, C., Yang, D., Cai, J., Chang, H. C.
  2025; 70 (23)

- **Foresight planning: Radiotherapy plan optimization via self-supervised model predictive control.** *Medical physics*
  Yang, D., Wu, X., Xie, Y., Li, X., Wu, Q., Wu, Q. J., Sheng, Y.
  2025; 52 (11): e70132

- **A technique for achieving arbitrary machine dose rates via MLC leaf motion modulation using fixed-gantry IMRT delivery mode.** *Medical physics*
  Wu, X., Yang, D., Wu, Q. J., Sheng, Y., Rodrigues, A. E., Kowalski, J. P., Wu, Q.
  2025; 52 (6): 3595-3610

- **A machine learning toolkit assisted approach for IMRT fluence map optimization: feasibility and advantages.** *Biomedical physics & engineering express*
  Wu, X., Yang, D., Sheng, Y., Wu, Q. J., Wu, Q.
  2025; 11 (3)

- **Reinforcement learning-driven automated head and neck simultaneous integrated boost (SIB) radiation therapy: flexible treatment planning aligned with clinical preferences.** *Physics in medicine and biology*
  Yang, D., Wu, X., Li, X., Xie, Y., Wu, Q., Wu, Q. J., Sheng, Y.
  2025; 70 (8)

- **Breast radiation therapy fluence painting with multi-agent deep reinforcement learning.** *Medical physics*
  Dongrong, Y., Xinyi, L., Sua, Y., Rachel, B., Susan, M., Sarah, S., Paul, S., Q Jackie, W., Yang, S.
  2025; 52 (4): 2015-2024

- **Clinical commissioning and introduction of an in-house artificial intelligence (AI) platform for automated head and neck intensity modulated radiation therapy (IMRT) treatment planning.** *Journal of applied clinical medical physics*
  Li, X., Sheng, Y., Wu, Q. J., Ge, Y., Brizel, D. M., Mowery, Y. M., Yang, D., Yin, F. F., Wu, Q.
  2025; 26 (1): e14558

- **Automated treatment planning with deep reinforcement learning for head-and-neck (HN) cancer intensity modulated radiation therapy (IMRT).** *Physics in medicine and biology*
  Yang, D., Wu, X., Li, X., Mansfield, R., Xie, Y., Wu, Q., Jackie Wu, Q., Sheng, Y.
  2024; 70 (1)

- **Understanding and modeling human-AI interaction of artificial intelligence tool in radiation oncology clinic using deep neural network: a feasibility study using three year prospective data.** *Physics in medicine and biology*
  Yang, D., Murr, C., Li, X., Yoo, S., Blitzblau, R., McDuff, S., Stephens, S., Wu, Q. J., Wu, Q., Sheng, Y.
  2024; 69 (22)

- **Dynamic Chest Radiograph Simulation Technique with Deep Convolutional Neural Networks: A Proof-of-Concept Study.** *Cancers*
  Yang, D., Huang, Y., Li, B., Cai, J., Ren, G.
  2023; 15 (24)

- **Deep learning attention-guided radiomics for COVID-19 chest radiograph classification.** *Quantitative imaging in medicine and surgery*
  Yang, D., Ren, G., Ni, R., Huang, Y. H., Lam, N. F., Sun, H., Wan, S. B., Wong, M. F., Chan, K. K., Tsang, H. C., Xu, L., Wu, T. C., Kong, et al

2023; 13 (2): 572-584

- **Volumetric multiphase ventilation imaging based on four-dimensional computed tomography for functional lung avoidance radiotherapy.** *Medical physics*
  Huang, Y. H., Ren, G., Xiao, H., Yang, D., Kong, F. S., Ho, W. Y., Cai, J.
  2022; 49 (11): 7237-7246
- **Radiomics-Based Detection of COVID-19 from Chest X-ray Using Interpretable Soft Label-Driven TSK Fuzzy Classifier.** *Diagnostics (Basel, Switzerland)*
  Zhang, Y., Yang, D., Lam, S., Li, B., Teng, X., Zhang, J., Zhou, T., Ma, Z., Ying, T. M., Cai, J.
  2022; 12 (11)
- **Deep Learning-Based Automatic Assessment of Radiation Dermatitis in Patients With Nasopharyngeal Carcinoma.** *International journal of radiation oncology, biology, physics*
  Ni, R., Zhou, T., Ren, G., Zhang, Y., Yang, D., Tam, V. C., Leung, W. S., Ge, H., Lee, S. W., Cai, J.
  2022; 113 (3): 685-694
- **Development and validation of bone-suppressed deep learning classification of COVID-19 presentation in chest radiographs.** *Quantitative imaging in medicine and surgery*
  Lam, N. F., Sun, H., Song, L., Yang, D., Zhi, S., Ren, G., Chou, P. H., Wan, S. B., Wong, M. F., Chan, K. K., Tsang, H. C., Kong, F. S., Wáng, et al
  2022; 12 (7): 3917-3931
- **Deep learning-based bone suppression in chest radiographs using CT-derived features: a feasibility study.** *Quantitative imaging in medicine and surgery*
  Ren, G., Xiao, H., Lam, S. K., Yang, D., Li, T., Teng, X., Qin, J., Cai, J.
  2021; 11 (12): 4807-4819