Dan Nguyen

Dan.Nguyen@UTSouthwestern.edu
(832)758-7108
3443 Mahanna St Apt 3120
Dallas, TX, 75209

EDUCATION

Ph.D. in Biomedical Physics	University of California Los Angeles	Spring 2017
M.S. in Biomedical Physics	University of California Los Angeles	Spring 2015
B.S. in Physics	The University of Texas at Austin	Spring 2012

CERTIFICATIONS

Medical Physics Board Certification, Part 1
The American Board of Radiology — Aug. 2013

Medical Physics Board Certification, Part 2
The American Board of Radiology — Aug. 2019

Machine Learning
Stanford University on Coursera — May 2016

HONORS & AWARDS

Distinguished Referee for Medical Physics 2020
Awarded for judicious review of manuscripts submitted to the Journal of Medical Physics

Winter Institute of Medical Physics - Early Career Medical Physicist Scholar 2019
Awarded for high potential as a future leader in medical physics. Nominated by Varian

John R. Cameron Young Investigator Competition Finalist 2016
Chosen as one of the highest ten scoring abstracts in the Young Investigator submission

Dissertation Year Fellowship 2016
Awarded for high impact research to support the final year of graduate education

Dr. Moses A Greenfield Award 2015
Awarded for notable research in the Physics and Biology in Medicine Graduate Program

Dr. Ursula Mandel Scholarship 2015
Awarded for distinguished research that is related, allied, and of value to the medical field

Nancy and William McMinn Endowed Presidential Scholarship in Physics 2012
Awarded for outstanding scholastic achievement in physics

University Honors - College Scholar 2009 – 2012
Awarded for exceptional collegiate performance at The University of Texas

Melvin J. Rieger Scholarship in Physics 2010 – 2011
Awarded for academic excellence in physics

SULI Internship Program, Lawrence Berkeley National Lab 2011
Stipend awarded for 10 weeks of research at LBNL

RESEARCH SUPPORT

Ongoing Research Support

2019/04/01-2024/03/31 1 R01 CA237269-01, NIH, Nguyen, Dan (Multiple PI)
Intelligent treatment planning for cancer radiotherapy
The goal of this project is to develop an artificial intelligent treatment planner capable of automatically creating personalized treatment plans
Role: Multiple PI

2019/12/01-2021/09/01 UTSW Radiation Oncology Funding Initiative—Individual Investigator Grant
Towards clinician-preferred, variable-beam Pareto optimal dose prediction using artificial intelligence and reinforcement learning.
The goal of this project is to develop AI planner variable-beam Pareto optimal dose prediction using artificial intelligence and reinforcement learning.
Role: PI

Past Research Support

2018/12/01-2020/12/01 UTSW Radiation Oncology Funding Initiative—Individual Investigator Grant
Artificial Intelligent Adaptive Treatment Planning for Monthly Fractionated SAbR in Lung Cancer Patients
The goal of this project is to develop a deep learning model capable of fast and robust adaptive radiation therapy planning.
Role: PI

RESEARCH & WORK EXPERIENCE

Assistant Professor 2018 –

Instructor 2017 – 2018

Medical Artificial Intelligence and Automation Laboratory (MAIA Lab)
Division of Medical Physics and Engineering, Department of Radiation Oncology, UT Southwestern
Supervised by Dr. Steve Jiang

- Co-founded the Medical Artificial Intelligence and Automation Laboratory (MAIA Lab)
- Investigated the application of artificial intelligence into radiation therapy treatment planning
- Created a framework for using beam orientation optimization for supervision of AI training

- Developed deep learning models for predicting clinical radiation doses
- Integrated deep learning models into a unified AI planner framework
- Explored the use of imitation learning for mimicking expert human behaviors in planning
- Coded a GPU-accelerated optimization package for rapid data generation for deep learning
- Guided the postdoctoral researchers and graduate students of Jiang Lab in their research
- Focused on, wrote, and submitted various grant applications since beginning of instructor position

Graduate Student Researcher 2013 – 2017
Department of Radiation Oncology, University of California Los Angeles
Supervised by Dr. Ke Sheng

- Developed multiconvex approach to direct aperture optimization for radiation therapy
- Formulated fluence map optimization with total variation regularization to improve dosimetry
- Implemented Chambolle-Pock algorithm, a primal-dual proximal algorithm, for optimization
- Optimized fluence maps in rectangular basis to produce directly deliverable rectangular apertures
- Developed model of Sparse Orthogonal Collimators (SOC) for delivery of rectangular fluences
- Applied fluence optimization techniques for ViewRay to improve radiation delivery
- Developed a convex optimization for improving volumetric modulated arc therapy (VMAT) plans
- Devised efficient MLC segmentation algorithm for creating MLC-deliverable fluences
- Retooled convolution/superposition dose calculation for low energy photons and small animals
- Investigated potential of sparse orthogonal collimators for high quality IMRT on mice
- Studied dose escalation on glioblastoma multiforme patients using 4π non-coplanar radiotherapy
- Treatment planned recurrent GBM patients on Eclipse for 4π radiotherapy clinical trials
- Explored potential benefits of 4π radiotherapy on SBRT head and neck cancer patients
- Modeled and investigated a digital elliptical water phantom using 4π non-coplanar radiotherapy
- Examined the dosimetry and integral dose of non-coplanar versus coplanar beam arrangement

Undergraduate Student Researcher 2010 – 2012
Center for Particles and Fields, Department of Physics, University of Texas at Austin
Supervised by Dr. Karol Lang

- Involved in SuperNEMO international collaboration to investigate neutrinoless double beta decay
- Assisted in building and testing cosmic ray detector for the SuperNEMO Project
- Developed workflow to characterize peak intensity wavelength for light emitting diodes (LED)
- Assembled photomultiplier tube (PMT) test stand and integrated circuit board into stand
- Assessed uniformity among sets of LEDs and along face of PMT
- Measured and characterized tensile strength, Young's modulus, and breaking tension of wires
- Debugged defective circuit boards and C++ programs

Research Intern Summer 2011
Nuclear Science Division, Lawrence Berkeley National Laboratory
Supervised by Dr. Howard Matis

- Modeled the high intensity luminosity detectors at the LHC for ATLAS and CMS on FLUKA
- Ran Monte Carlo simulations of high energy proton-proton interactions
- Analyzed neutral particle scatter to optimize the beam geometry parameters for LHC operators

WORK EXPERIENCE

Undergraduate Learning Assistant 2011 – 2012

Department of Physics, University of Texas at Austin, Austin, Texas

Supervised by Dr. Jack Turner (Spring 2011) and Dr. Harry Swinney (Fall 2011 – Spring 2012)

- Taught students the fundamental concepts of classical and modern physics
- Served as an intermediary between the students and the professor
- Assisted the graduate teaching assistant in facilitating discussions sessions

PUBLICATIONS

Editor Positions

1) Nguyen, D., Xing, L., & Jiang, S. Artificial Intelligence in Radiation Therapy. Lecture Notes in Computer Science (LNCS) book series, volume 11769.

Review Papers

1) Shen, C., Nguyen, D., Zhou, Z., Jiang, S. B., Dong, B., & Jia, X. (2020). An introduction to deep learning in medical physics: advantages, potential, and challenges. *Physics in Medicine & Biology*, *65*(5), 05TR01.

First Author Publications

1) Nguyen, D., Dong, P., Long, T., Ruan, D., Low, D. A., Romeijn, E., & Sheng, K. (2014). Integral dose investigation of non-coplanar treatment beam geometries in radiotherapy. *Medical physics*, *41*(1).

2) Nguyen, D., Rwigema, J. C. M., Victoria, Y. Y., Kaprealian, T., Kupelian, P., Selch, M., ... & Sheng, K. (2014). Feasibility of extreme dose escalation for glioblastoma multiforme using 4π radiotherapy. *Radiation Oncology*, *9*(1), 239.

3) Nguyen, D., O'connor, D., Yu, V. Y., Ruan, D., Cao, M., Low, D. A., & Sheng, K. (2015). Dose domain regularization of MLC leaf patterns for highly complex IMRT plans. *Medical physics*, *42*(4), 1858-1870.

4) Nguyen, D., Ruan, D., O'Connor, D., Woods, K., Low, D. A., Boucher, S., & Sheng, K. (2016). A novel software and conceptual design of the hardware platform for intensity modulated radiation therapy. *Medical physics*, *43*(2), 917-929.

5) Nguyen, D., Lyu, Q., Ruan, D., O'connor, D., Low, D. A., & Sheng, K. (2016). A comprehensive formulation for volumetric modulated arc therapy planning. *Medical physics*, *43*(7), 4263-4272.

6) Nguyen, D., Thomas, D., Cao, M., O'Connor, D., Lamb, J., & Sheng, K. (2016). Computerized triplet beam orientation optimization for MRI-guided Co-60 radiotherapy. *Medical physics*, *43*(10), 5667-5675.

7) Nguyen, D., O'Connor, D., Ruan, D., & Sheng, K. (2017). Deterministic direct aperture optimization using multiphase piecewise constant segmentation. *Medical physics*, *44*(11), 5596-5609.

8) Nguyen, D., Long, T., Jia, X., Lu, W., Gu, X., Iqbal, Z., & Jiang, S. (2019). A feasibility study for predicting optimal radiation therapy dose distributions of prostate cancer patients from patient anatomy using deep learning. Scientific reports, 9(1), 1076.

9) Nguyen, D., Jia, X., Sher, D., Lin, M.-H., Iqbal, Z., Liu, H., & Jiang, S. (2019). 3D radiotherapy dose prediction on head and neck cancer patients with a hierarchically densely connected U-net deep learning architecture. Physics in Medicine & Biology, 64(6), 065020. doi:10.1088/1361-6560/ab039b.

10) Nguyen, D., Barkousaraie, A. S., Shen, C., Jia, X., & Jiang, S. (2019). Generating pareto optimal dose distributions for radiation therapy treatment planning. Part of the *Lecture Notes in Computer Science* book series, volume 11769.

11) Nguyen, D., McBeth, R., Sadeghnejad Barkousaraie, A., Bohara, G., Shen, C., Jia, X., & Jiang, S. (2020). Incorporating human and learned domain knowledge into training deep neural networks: A differentiable dose-

volume histogram and adversarial inspired framework for generating Pareto optimal dose distributions in radiation therapy. *Medical physics*, *47*(3), 837-849.

12) Nguyen, D., Barkousaraie, A. S., Bohara, G., Balagopal, A., McBeth, R., Lin, M. H., & Jiang, S. B. (2021). A comparison of Monte Carlo dropout and bootstrap aggregation on the performance and uncertainty estimation in radiation therapy dose prediction with deep learning neural networks. *Physics in Medicine & Biology*.

Co-author Publications

1) Dong, P., Yu, V., Nguyen, D., Demarco, J., Woods, K., Boucher, S., ... & Sheng, K. (2014). Feasibility of using intermediate x-ray energies for highly conformal extracranial radiotherapy. *Medical physics*, *41*(4).

2) Dong, P., Nguyen, D., Ruan, D., King, C., Long, T., Romeijn, E., ... & Sheng, K. (2014). Feasibility of prostate robotic radiation therapy on conventional C-arm linacs. *Practical radiation oncology*, *4*(4), 254-260.

3) Rwigema, J., Nguyen, D., Heron, D., Chen, A. M., Lee, P., Vargo, J. A., ... & Sheng, K. (2014). 4π Non-Coplanar Stereotactic Body Radiation Therapy (SBRT) for Head and Neck Cancer: Potential to Improve Local Control and Late Toxicity. *International Journal of Radiation Oncology• Biology• Physics*, *90*(1), S556-S557.

4) Victoria, Y. Y., Nguyen, D., Pajonk, F., Kupelian, P., Kaprealian, T., Selch, M., ... & Sheng, K. (2015). Incorporating cancer stem cells in radiation therapy treatment response modeling and the implication in glioblastoma multiforme treatment resistance. *International Journal of Radiation Oncology* Biology* Physics*, *91*(4), 866-875.

5) Yu, V. Y., Tran, A., Nguyen, D., Cao, M., Ruan, D., Low, D. A., & Sheng, K. (2015). The development and verification of a highly accurate collision prediction model for automated noncoplanar plan delivery. *Medical physics*, *42*(11), 6457-6467.

6) Woods, K., Nguyen, D., Tran, A., Victoria, Y. Y., Cao, M., Niu, T., ... & Sheng, K. (2016). Viability of Noncoplanar VMAT for liver SBRT compared with coplanar VMAT and beam orientation optimized 4π IMRT. *Advances in radiation oncology*, *1*(1), 67-75.

7) Tran, A., Zhang, J., Woods, K., Yu, V., Nguyen, D., Gustafson, G., ... & Sheng, K. (2017). Treatment planning comparison of IMPT, VMAT and 4π radiotherapy for prostate cases. *Radiation Oncology*, *12*(1), 10.

8) Tran, A., Woods, K., Nguyen, D., Victoria, Y. Y., Niu, T., Cao, M., ... & Sheng, K. (2017). Predicting liver SBRT eligibility and plan quality for VMAT and 4π plans. *Radiation Oncology*, *12*(1), 70.

9) Gu, W., O'Connor, D., Nguyen, D., Yu, V. Y., Ruan, D., Dong, L., & Sheng, K. (2018). Integrated beam orientation and scanning-spot optimization in intensity-modulated proton therapy for brain and unilateral head and neck tumors. *Medical physics*, *45*(4), 1338-1350.

10) O'Connor, D., Yu, V., Nguyen, D., Ruan, D., & Sheng, K. (2018). Fraction-variant beam orientation optimization for non-coplanar IMRT. *Physics in Medicine & Biology*, *63*(4), 045015.

11) Lyu, Q., O'Connor, D., Ruan, D., Yu, V., Nguyen, D., & Sheng, K. (2018). VMAT optimization with dynamic collimator rotation. *Medical physics*.

12) Iqbal, Z., Luo, D., Henry, P., Kazemifar, S., Rozario, T., Yan, Y., Westover, K., Lu, W., Nguyen, D., Long, T., Wang, J., Choy, H., & Jiang, S. (2018). Accurate real time localization tracking in a clinical environment using Bluetooth Low Energy and deep learning. PloS one, 13(10), e0205392.

13) O'Connor, D., Yu, V., Nguyen, D., Ruan, D., & Sheng, K. (2018). Fraction-variant beam orientation optimization for non-coplanar IMRT. *Physics in Medicine & Biology*, *63*(4), 045015.

14) Kazemifar, S., Balagopal, A., Nguyen, D., McGuire, S., Hannan, R., Jiang, S., & Owrangi, A. (2018). Segmentation of the prostate and organs at risk in male pelvic CT images using deep learning. Biomedical Physics & Engineering Express, 4(5), 055003.

15) Balagopal, A., Kazemifar, S., Nguyen, D., Lin, M. H., Hannan, R., Owrangi, A., & Jiang, S. (2018). Fully automated organ segmentation in male pelvic CT images. Physics in Medicine & Biology, 63(24), 245015.

16) Kazemifar, S., Balagopal, A., Nguyen, D., McGuire, S., Hannan, R., Jiang, S., & Owrangi, A. (2018). Segmentation of the prostate and organs at risk in male pelvic CT images using deep learning. *Biomedical Physics and Engineering Express*.

17) Balagopal, A., Kazemifar, S., Nguyen, D., Lin, M. H., Hannan, R., Owrangi, A., & Jiang, S. (2018). Fully automated organ segmentation in male pelvic CT images. *Physics in Medicine & Biology*, *63*(24), 245015.

18) Shen, C., Gonzalez, Y., Klages, P., Qin, N., Jung, H., Chen, L., ... & Jia, X. (2019). Intelligent inverse treatment planning via deep reinforcement learning, a proof-of-principle study in high dose-rate brachytherapy for cervical cancer. Physics in Medicine & Biology, 64(11), 115013.

19) Barragán-Montero, A. M., Nguyen, D., Lu, W., Lin, M., Norouzi-Kandalan, R., Geets, X., ... & Jiang, S. (2019). Three-dimensional dose prediction for lung IMRT patients with deep neural networks: robust learning from heterogeneous beam configurations. *Medical Physics*.

20) Ma, J., Bai, T., Nguyen, D., Folkerts, M., Jia, X., Lu, W., ... & Jiang, S. (2019, October). Individualized 3D dose distribution prediction using deep learning. In *Workshop on Artificial Intelligence in Radiation Therapy* (pp. 110-118). Springer, Cham.

21) Barkousaraie, A. S., Ogunmolu, O., Jiang, S., & Nguyen, D. (2019, October). Using supervised learning and guided monte carlo tree search for beam orientation optimization in radiation therapy. In *Workshop on Artificial Intelligence in Radiation Therapy* (pp. 1-9). Springer, Cham.

22) Yang, Q., Chao, H., Nguyen, D., & Jiang, S. (2019, October). A Novel Deep Learning Framework for Standardizing the Label of OARs in CT. In *Workshop on Artificial Intelligence in Radiation Therapy* (pp. 52-60). Springer, Cham.

23) Liang, X., Chen, L., Nguyen, D., Zhou, Z., Gu, X., Yang, M., ... & Jiang, S. (2019). Generating synthesized computed tomography (CT) from cone-beam computed tomography (CBCT) using CycleGAN for adaptive radiation therapy. *Physics in Medicine & Biology*, *64*(12), 125002.

24) Xing, Y., Nguyen, D., Lu, W., Yang, M., & Jiang, S. (2020). A feasibility study on deep learning-based radiotherapy dose calculation. *Medical physics*, *47*(2), 753-758.

25) Sadeghnejad Barkousaraie, A., Ogunmolu, O., Jiang, S., & Nguyen, D. (2020). A fast deep learning approach for beam orientation optimization for prostate cancer treated with intensity-modulated radiation therapy. *Medical physics*, *47*(3), 880-897.

26) Bohara, G., Sadeghnejad Barkousaraie, A., Jiang, S., & Nguyen, D. (2020). Using deep learning to predict beam-tunable Pareto optimal dose distribution for intensity-modulated radiation therapy. *Medical Physics*, *47*(9), 3898-3912.

27) Wu, C., Nguyen, D., Xing, Y., Barragan, A., Schuemann, J., Shang, H., ... & Jiang, S. B. (2020). Improving Proton Dose Calculation Accuracy by Using Deep Learning. *Machine Learning: Science and Technology*.

28) Shen, C., Chen, L., Gonzalez, Y., & Jia, X. (2020). Improving Efficiency of Training a Virtual Treatment Planner Network via Knowledge-guided Deep Reinforcement Learning for Intelligent Automatic Treatment Planning of Radiotherapy. *Medical physics*.

29) Xing, Y., Zhang, Y., Nguyen, D., Lin, M. H., Lu, W., & Jiang, S. (2020). Boosting radiotherapy dose calculation accuracy with deep learning. *Journal of applied clinical medical physics*, *21*(8), 149-159.

30) Shen, C., Nguyen, D., Chen, L., Gonzalez, Y., McBeth, R., Qin, N., ... & Jia, X. (2020). Operating a treatment planning system using a deep-reinforcement learning-based virtual treatment planner for prostate cancer intensity-modulated radiation therapy treatment planning. *Medical physics*, *47*(6), 2329-2336.

31) Kandalan, R. N., Nguyen, D., Rezaeian, N. H., Barragán-Montero, A. M., Breedveld, S., Namuduri, K., ... & Lin, M. H. (2020). Dose prediction with deep learning for prostate cancer radiation therapy: Model adaptation to different treatment planning practices. *Radiotherapy and Oncology*, *153*, 228-235.

32) Shen, C., Tsai, M. Y., Chen, L., Li, S., Nguyen, D., Wang, J., ... & Jia, X. (2020). On the robustness of deep learning-based lung-nodule classification for CT images with respect to image noise. *Physics in Medicine & Biology*, *65*(24), 245037.

33) Yu, V. Y., Nguyen, D., O'Connor, D., Ruan, D., Kaprealian, T., Chin, R., & Sheng, K. (2021). Treating Glioblastoma Multiforme (GBM) with super hyperfractionated radiation therapy: Implication of temporal dose fractionation optimization including cancer stem cell dynamics. *Plos one*, *16*(2), e0245676.

34) Li, W., Kazemifar, S., Bai, T., Nguyen, D., Weng, Y., Li, Y., ... & Jiang, S. B. (2021). Synthesizing CT images from MR images with deep learning: model generalization for different datasets through transfer learning. *Biomedical Physics & Engineering Express*.

35) Gonzalez, Y., Shen, C., Jung, H., Nguyen, D., Jiang, S. B., Albuquerque, K., & Jia, X. (2021). Semi-automatic sigmoid colon segmentation in CT for radiation therapy treatment planning via an iterative 2.5-D deep learning approach. *Medical Image Analysis*, *68*, 101896.

arXiv Preprints

1) O'Connor, D., Voronenko, Y., Nguyen, D., Yin, W., & Sheng, K. (2017). Fast non-coplanar beam orientation optimization based on group sparsity. *arXiv preprint arXiv:1710.05308*.

2) Iqbal, Z., Nguyen, D., & Jiang, S. (2018). Super-Resolution 1H Magnetic Resonance Spectroscopic Imaging utilizing Deep Learning. *arXiv preprint arXiv:1802.07909*.

3) Iqbal, Z., Nguyen, D., Thomas, M. A., & Jiang, S. (2018). Acceleration and Quantitation of Localized Correlated Spectroscopy using Deep Learning: A Pilot Simulation Study. *arXiv preprint arXiv:1806.11068*.

CONFERENCE WORKSHOPS/SYMPOSIUMS

1) Organizer and Chair (alongside Steve Jiang and Lei Xing) of the 1st International Workshop on Artificial Intelligence in Radiation Therapy (AIRT), held in conjunction with the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI). (2019, Oct.).

2) Organizer and Chair (alongside Hien Nguyen) of the Bayesian Deep Learning Tutorial, held in conjunction with the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI). (2019, Oct.).

CONFERENCE PRESENTATIONS

First Author Submissions

1) Nguyen, D., Dong, P., Ruan, D., Low, D., Sheng, K. (2013, Aug.). Integral Dose Study of Non-Coplanar 4pi Radiotherapy. Poster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Indianapolis, IN, USA.

2) Nguyen, D., Yu, V., Ruan, D., Semwal, H., O'Connor, Cao, M., Low, D., Sheng, K. (2014, Jul.). Dose Domain Optimization of MLC Leaf Patterns for Highly Complicated 4π IMRT Plans. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Austin, TX, USA.

3) Nguyen, D., Rwigema, JC., Yu, V., Kaprealian, T., Kupelian, P., Selch, M., Lee, P., Low, D., Sheng, K. (2014, Jul.). Feasibility of extreme dose escalation for Glioblastoma Multiforme using 4π radiotherapy. Poster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Austin, TX, USA.

4) Nguyen, D., Rwigema, JC., Yu, V., Kaprealian, T., Kupelian, P., Selch, M., Lee, P., Low, D., Sheng, K. (2014, Sep.). Feasibility of extreme dose escalation for Glioblastoma Multiforme using 4π radiotherapy. Oral presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Francisco, CA, USA.

5) Nguyen, D., Ruan, D., O'Connor, D., Low, D., Boucher, S., Sheng, K. (2015, Jul.). A Novel Haar Wavelet Based Approach to Deliver Non-Coplanar Intensity Modulated Radiotherapy Using Sparse Orthogonal Collimators. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

6) Nguyen, D., O'Connor, D., Yu, V., Ruan, D., Cao, M., Low, D., Sheng, K. (2015, Jul.). A New Intensity Modulation Radiation Therapy (IMRT) Optimizer Solution with Robust Fluence Maps for MLC Segmentation. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

7) Nguyen, D., Ruan, D., O'Connor, D., Low, D., Sheng, K. (2015, Oct.). A novel approach to deliver non-coplanar intensity modulated radiotherapy using simple orthogonal collimators. ePoster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Antonio, TX, USA.

8) Nguyen, D., Lyu, Q., Ruan, D., O'Connor, D., Low, D., Sheng, K. (2016, Jul.). A Global Level Set Based Formulation for Volumetric Modulated Arc Therapy. **John R. Cameron Young Investigator Competition Finalist** presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

9) Nguyen, D., Thomas, D., Cao, M., O'Connor, D., Lamb, J., Sheng, K. (2016, Jul.). Automated Triplet Beam Orientation Optimization for MRI-Guided Co-60 Radiotherapy. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

10) Nguyen, D., Thomas, D., Cao, M., O'Connor, D., Lamb, J., Sheng, K. (2016, Sep.). Automated Triplet Beam Orientation Optimization for MRI-Guided Co-60 Radiotherapy. Oral presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, Boston, MA, USA.

11) Nguyen, D. (2017, Jul.). Making better IMRT plans using a new direct aperture optimization approach. Presentation for SAM Therapy Educational Course: Inverse Optimization Meets High Performance Computing at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

12) Nguyen. D., Lyu, Q., O'Connor, D., Gao, H., Qi, X., Sheng, K. (2017, Jul.). Megavoltage Iterative CT Reconstruction Utilizing L0-Penalty Based Total Count Variation Regularization. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

13) Nguyen, D., O'Connor, D., Lyu, Q., Ruan, D., Sheng, K. (2017, Jul.). Direct Aperture Optimization Utilizing L0-Penalty Based Total Count Variation Regularization. Poster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

14) Nguyen, D., Jia, X., Sher, D., Lin, M., Iqbal, Z., Liu, H., Jiang, S. (2018, Jul.). Volumetric Dose Prediction On Head and Neck Cancer Patients with a Novel Deep Learning Architecture: Hierarchically Densely Connected U-Net. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

15) Nguyen, D., Sadeghnejad-Barkousaraie, A., Shen, C., Jia, X., Jiang, S. (2019, Jun.) Real-time generation of Pareto 3D dose distributions for radiotherapy. Highlight oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

16) Nguyen, D., Balagopal, A., Shen, C., Lin, M., Hannan, R., Jiang, S. (2019, Jun.). Using a Bayesian neural network approximation to quantify the uncertainty in segmentation prediction on prostate cancer. Highlight oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

17) Nguyen, D., Sadeghnejad-Barkousaraie, A., Shen, C., Jia, X., Jiang, S. (2019, Jul.). Real-time Generation of Pareto 3D Dose Distributions for Radiotherapy. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

18) Nguyen, D., Balagopal, A., Shen, C., Lin, M., Hannan, R., Jiang, S. (2019, Jul). Using a Bayesian Neural Network Approximation of Quantify the Uncertainty in Segmentation Prediction On Prostate Cancer. General ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

19) Nguyen, D., Iqbal, Z., Thomas, M., Jiang, S. (2019, Jul). Acceleration of Localized Correlated Spectroscopy Using Deep Learning: A Pilot Simulation Study. General ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

20) Nguyen, D., Sadeghnejad-Barkousaraie, A., Shen, C., Jia, X., Jiang, S. (2019, Oct.). Generating Pareto optimal dose distribution for radiation therapy treatment planning. Poster presentation at the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

Senior Author Submissions

1) Sadeghnejad-Barkousaraie, A., Ogunmolu, O., Jiang, S., Nguyen, D. (2019, Jun.) Deep Learning Neural Network for Beam Orientation Optimization. Oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

2) Sadeghnejad-Barkousaraie, A., Jiang, S., Nguyen, D. (2019, Jun.). A reinforcement learning application of Guided Monte Carlo Tree Search algorithm for beam orientation selection in radiation therapy. Poster presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

3) Sadeghnejad-Barkousaraie, A., Ogunmolu, O., Jiang, S., Nguyen, D. (2019, Jul.). A Fast Deep Learning Approach for Beam Orientation Selection Using Supervised Learning with Column Generation On IMRT Prostate Cancer Patients. General ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

4) Sadeghnejad-Barkousaraie, A., Ogunmolu, O., Jiang, S., Nguyen, D., (2019, Jul.). A Reinforcement Learning Application of Guided Monte Carlo Tree Search Algorithm for Beam Orientation Selection in Radiation Therapy. General ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

5) Sadeghnejad-Barkousaraie, A., Olalekan, O., Jiang, S., Nguyen, D. (2019, Oct.). Using Supervised Learning and Guided Monte Carlo Tree Search for Beam Orientation Optimization in Radiation Therapy. Oral presentation at the 1st International Workshop on Artificial Intelligence in Radiation Therapy (AIRT), held in conjunction with the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

Presenting Author Presentations (Co-Author)

1) Ogunmolu, O., Nguyen, D., Shen, C., Jia, X., Lu, W., Gans, N., Jiang, S. (2018, Jul.). Automating Beam Orientation Optimization for IMRT Treatment Planning: A Deep Reinforcement Learning Approach. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.
2) Ji, W., Nguyen, D., Lin, M., Liu, H., Hannan, R., Jiang, S. (2018, Jul.). Prediction of 3D Dose Distribution for Prostate Cancer Patients Treated with VMAT Using Deep Learning. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.
3) Barragan-Montero, A., Nguyen, D., Lu, W., Lin, Mu., Geets, X., Sterpin, E., Jiang, S. (2019, Jun.). Three-Dimensional Dose Prediction for Lung IMRT Patients with Variable Beam Configuration using Deep Neural Networks. Oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.
4) Xing, Y., Zhang, Y., Nguyen, D., Lin, M., Lu, W., Jiang, S. (2019, Jun.) Improving treatment plan dose accuracy using a deep learning-based dose conversion scheme. Poster presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.
5) Balagopal, A., Lin, M., Hannan, R., Nguyen, D., Jiang, S. (2019, Jun.). Physician, specific post-op prostate CTV delineation using deep learning. Poster presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.
6) Wu, C., Nguyen, D., Xing, Y., Barragan-Montero, A., Schuemann, J., Pu, Y., Jiang, S. (2019, Jun.). Improving proton dose calculation accuracy using deep learning. Poster presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.
7) Ma, J., Nguyen, D., Folkerts, M., Jia, X., Lu, W., Zhou, L., Jiang, S. (2019, Jun.). Radiotherapy Dose Prediction with Physician Desired Trade-offs. Oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.
8) McBeth, R., Nguyen, D., Jiang, S. (2019, Jun.). Deep learning-based 3D dose prediction with a self-evolving training dataset. Oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

Co-author Submissions

6) Dong, P., Nguyen, D., Long, T., Ruan, D., Romeijin, E., Low, D., Sheng, K. (2013, Aug). **Robotic Radiotherapy Using Intermediate Beam Energies.** Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Indianapolis, IN, USA.
7) Dong, P., Nguyen, D., Ruan, D., Romeijin, E., Long, T., Kupelian, P., Yang, Y., Low, D., King, C., Steinberg, M., Sheng, K. (2013, Aug.). Prostate Robotic Radiotherapy on Conventional C-Arm Linacs. Poster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Indianapolis, IN, USA.
8) Rwigema, JC., Nguyen, D., Vargo, J., Low, D., Heron, D., Huq, S., Steinberg, M., Sheng, K. (2014, Apr.). 4π Noncoplanar Stereotactic Body Radiation Therapy for Head and Neck Cancers. Oral presentation at the American Radium Society Annual Meeting, Marriott Frenchman's Reef St. Thomas, U.S.V.I., USA.
9) Yu, V., Nguyen, D., Kupelian, P., Kaprealian, T., Selch, M., Low, D., Pajonk, F., Sheng, K. (2014, Jul.). Dual Compartment Mathematical Modeling of Glioblastoma Multiforme. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Austin, TX, USA.
10) Rwigema, JC., Nguyen, D., Heron, D., Chen, A., Lee, P., Vargo, J., Low, D., Huq, S., Steinberg, M., Kupelian, P., Sheng, K. (2014, Sep.). 4π Noncoplanar Stereotactic Body Radiation Therapy for Head

and Neck Cancers – Improved Local Control and Late Toxicities. Poster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Francisco, CA, USA.

11) Yu, V., Nguyen, D., Pajonk, F., Sheng, K. (2014, Sep.). A Dual Compartment Linear-Quadratic Model of Cell Survival. Poster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Francisco, California, USA.

12) Tran, A., Zhang, J., Woods, K., Yu, V., Nguyen, D., Sheng, K. (2015, Jul.). Treatment Planning Comparison of SFUD Proton and 4π Radiotherapy for Prostate Cases. Poster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

13) Tran, A., Yu, V., Nguyen, D., Woods, K., Low, D., Sheng, K. (2015, Jul.). A Statistical Voxel Based Normal Organ Dose Prediction Model for Coplanar and Non-Coplanar Prostate Radiotherapy. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

14) Woods, K., Nguyen, D., Tran, A., Yu, V., Cao, M., Sheng, K. (2015, Jul.). Comparison of Coplanar VMAT, Non-Coplanar VMAT, and 4π Treatment Plans. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

15) Yu, V., Nguyen, D., Pajonk, F., Kaprealian, T., Kupelian, P., Steinberg, M., Low, D., Sheng, K. (2015, Jul.). Treating Glioblastoma Multiforme (GBM) as a Chronic Disease: Implication of Temporal-Spatial Dose Fractionation Optimization Including Cancer Stem Cell Dynamics. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

16) Yu, V., Nguyen, D., Tran, A., Ruan, D., Cao, M., Kaprealian, T., Kupelian, P., Low, D., Sheng, K. (2015, Jul.). 4π Non-Coplanar Radiotherapy: From Mathematical Modeling to Clinical Implementation. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Aneheim, CA, USA.

17) Yu, V., Nguyen, D., Pajonk, F., Kaprealian, T., Kupelian, P., Steinberg, M., Low, D., Sheng, K. (2015, Oct.). Treating Glioblastoma Multiforme as a Chronic Disease: Mathematical Dose Fractionation Schedule Optimization and Modeling with Cancer Stem Cell Dynamics. ePoster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Antonio, TX, USA.

18) Tran, A., Woods, K., Nguyen, D., Yu, V., Lee, P., Kupelian, P., Low, D., Sheng, K. (2015, Oct.). Practical 4π Liver SBRT using Eclipse planning. Poster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Antonio, TX, USA.

19) Tran, A., Woods, K., Nguyen, D., Yu, V., Cao, M., Lee, P., Low, D., Sheng, K. (2015, Oct.). Predicting Liver SBRT eligibility and plan quality using geometrical parameters. Poster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, San Antonio, TX, USA.

20) Woods, K., Karunamuni, R., Tran, A., Yu, V., Nguyen, D., Hattangadi-Gluth, J., Sheng, K. (2016, Aug.). Dosimetric Comparison of 4p and Clinical IMRT for Cortex-Sparing High-Grade Glioma Treatment. BEST IN PHYSICS Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

21) Zhang, J., Nguyen, D., Woods, K., Tran, A., Li, X., Kabolizadeh, P., Guerrero, T., Sheng, K. (2016, Jul.). A Treatment Planning Study of Normal Tissue Sparing with Robustness Optimized IMPT, 4Pi IMRT, and VMAT for Head and Neck Cases. Poster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

22) Yu, V., Tran, A., Nguyen, D., Woods, K., Cao, M., Kaprealian, T., Chin, R., Low, D., Sheng, K. (2016. Jul.). Significant Cord and Esophagus Dose Reduction by 4p Non-Coplanar Spine Stereotactic Body Radiation Therapy and Stereotactic Radiosurgery. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

23) Tran, A., Ruan, D., Woods, K., Yu, V., Nguyen, D., Sheng, K. (2016, Jul.). A Comparison of Learning Methods for Knowledge Based Dose Prediction for Coplanar and Non-Coplanar Liver Radiotherapy.

Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

24) O'Connor, D., Voronenko, Y., Nguyen, D., Yin, W., Sheng, K, (2016, Jul.). 4pi Non-Coplanar IMRT Beam Angle Selection by Convex Optimization with Group Sparsity Penalty. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Washington, DC, USA.

25) Yu, V., Tran, A., Nguyen, D., Woods, K., Kaprealian, T., Chin, R., Low, D., Sheng, K. (2016, Sep.). Significant cord and esophagus dose reduction by 4π non-coplanar spine stereotactic body radiation therapy and stereotactic radiosurgery. Poster presentation at the American Society for Radiation Oncologists (ASTRO) Annual Conference, Boston, MA, USA.

26) Gu, W., O'Connor, D., Nguyen, D., Yu, V., Ruan, D., Sheng, K. (2017, Jul.). Fraction-Variant Beam Angle Optimization in Intensity Modulated Proton Therapy. ePoster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

27) Yu, V., Landers, A., Woods, K., Nguyen, D., Cao, M., Chin, R., Kaprealian, T., Sheng, K. (2017, Jul.). A Prospective 4π Radiotherapy Clinical Trial in Recurrent Glioblastoma Multiforme (GBM) Patients. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

28) O'Connor, D., Nguyen, D., Ruan, D., Yu, V., Sheng, K. (2017, Jul.). Fraction-Variant Beam Orientation Optimization for IMRT Based On Group Sparsity. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

29) Woods, K., Nguyen, D., Ruan, D., O'Connor, D., Sheng, K. (2017, Jul.). Double-Focused Sparse Orthogonal Collimator Design for Small Animal X-Ray Irradiators. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

30) Lyu, Q., Ruan, D., Nguyen, D., O'Connor, D., Sheng, K. (2017, Jul.). VMAT Optimization with Dynamic Collimator Rotation. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

31) Yu, V., O'Connor, D., Nguyen, D., Gu, W., Ruan, D., Sheng, K. (2017, Jul.). Predicting Time to Glioblastoma Multiforme (GBM) Recurrence with MR Image Texture Analysis. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

32) O'Connor, D., Nguyen, D., Ruan, D., Yu, V., Sheng, K. (2017, Jul.). Beam Orientation Optimization with Non-Convex Group Sparsity Penalty. ePoster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

33) Gu, W., O'Connor, D., Yu, V., Nguyen, D., Ruan, D., Sheng, K. (2017, Jul.). Integrated Beam Angle and Scanning-Spot Optimization in Intensity Modulated Proton Therapy Using Group Sparsity. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Denver, CO, USA.

34) Ma, Lin., Nguyen, D., Yan, Y., Pompos, A., Tan, J., Lu, W., Hannan, R., Jiang, S. (2018, Jul.). Detecting Errors in Radiotherapy Treatment Plans Using Deep Learning. Poster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

35) Xing, Y., Nguyen, D., Lu, W., Jiang, S. (2018, Jul.). Modeling Complex Systems Using Deep Learning with Prior Knowledge: Radiotherapy Dose Calculation as an Example. Poster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

36) Iqbal, Z., Luo, D., Henry, P., Kazemifar, S., Rozario, T., Yan,Y., Westover, K., Lu, W., Nguyen, D. (2018, Jul.). Accurate Real Time Localization Tracking in A Clinical Environment Using Bluetooth Low Energy and Deep Learning. Poster presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

37) Ma, J., Nguyen, D., Jia, X., Lu, W., Zhou, L., Jiang, S. (2018, Jul.). Deep Learning-Based 3D Dose Prediction with DVH and Contours as Inputs. Oral presentation at American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

38) Qin, G., Zhou, Z., Xu, Y., Ma, J., Zhang, Q., Nguyen, D., Wang, J., Zhou, L., Chen, W., Jiang, S. (2018, Jul.). Predicting Malignant Mass in Digital Breast Tomosynthesis Using a Multi-Objective Radiomics Model. ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

39) Rozario, T., Nguyen, D., Lin, M., Long, T., Chen, M., Lu, W., Jiang, S. (2018, Jul.). Automated Standardization of Organ Labeling in Head and Neck Using Deep Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

40) Shen C., Gonzalez, Y., Jung, H., Chen, L., Qin, N., Nguyen, D., Jiang, S., Jia, X. (2018, Jul.). Deep Reinforcement Learning Based Inverse Treatment Planning: A Study in High-Dose-Rate Brachytherapy for Cervical Cancer. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

41) Iqbal, Z., Nguyen, D., Jiang, S. (2018, Jul.). Super-Resolution for Positron Emission Tomography Images Using Deep Learning. ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

42) Qin, G., Chen, H., Zeng, H., Xu, Y., Zhou, Z., Zhang, Q., Nguyen, D., Chen, W., Zhou, L., Jiang, S. (2018, Jul.). Mass Detection and Segmentation in Digital Breast Tomosynthesis Via Deep-Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

43) Woods, K., Nguyen, D., Neph, R., O'Connor, D., Boucher, S., Sheng, K. (2018, Jul.). Sparse Orthogonal Collimator with Rectangular Aperture Optimization for Small Animal IMRT. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

44) O'Connor, D., Nguyen, D., Ruan, D., Landers, A., Woods, K., Boehnke, E., Sheng, K. (2018, Jul.). Fast Direct Aperture Optimization Via Parallelizable Approximate Projection Onto the Set of Aperture-Ready Fluence Maps. ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

45) Iqbal, Z., Nguyen, D., Jiang, S. (2018, Jul.). Super-Resolution 1H Magnetic Resonance Spectroscopic Imaging Utilizing Deep Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

46) Rozario, T., Nguyen, D., Lin, M., Jia, X., Lu, W., Jiang, S. (2018, Jul.). Semi-Supervised GANs for Head and Neck Organ Recognition with Small Labeled Datasets. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

47) Balagopal, A., Kazemifar, S., Nguyen, D., Lin, M., Hannan, R., Owrangi, A., Jiang, S. (2018, Jul.). CT-Based Volumetric Segmentation of Male Pelvis Using Deep Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

48) Kazemifar, S., Balagopal, A., Nguyen D., McGuire, S., Hannan, R., Jiang, S., Owrangi, A. (2018, Jul.). Segmentation of the Prostate and Organs at Risk in Male Pelvic CT Images Using Deep Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

49) Kazemifar, S., Nguyen, D., McGuire, S., Timmerman, R., Nedzi, L., Wardak, Z., Gu, X., Jiang, S. (2018, Jul.). Synthetic CT Generation for MRI-Only Radiation Therapy Using Deep Learning. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

50) Liang, X., Chen, L., Nguyen, D., Wang, J., Jiang, S. (2018, Jul.). Unparied Cone-Beam CT to CT Translation Using Cycle-Consistent Adversarial Networks. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, Nashville, TN, USA.

51) Shen, C., Gonzalez, Y., Nguyen, D., Chen, L., Jiang, S., Jia, X. (2019, Jun.). Virtual Treatment Planner for Radiation Therapy via Deep Reinforcement Learning. Poster presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

52) Ma, L., Chen, M., Nguyen, D., Jiang, S., Gu, X., Lu, W. (2019, Jun.). Inverse Planning without Optimization. Oral presentation at The International Conference on the Use of Computers in Radiation Therapy (ICCR) Conference, Montreal, Canada.

53) Xing, Y., Zhang, Y., Nguyen, D., Lin, M., Lu, W., Jiang, S. (2019, Jul.). Improving Treatment Plan Dose Accuracy Using a Deep Learning-Based Dose Conversion Scheme. General ePoster presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

54) Balagopal, A., Lin, M., Hannan, R., Nguyen, D., Jiang, S. (2019, Jul.). Physician Specific Post-Op Prostate Cancer CTV Delineation Using Deep Learning. Snap oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

55) Wu, C., Nguyen, D., Xing, Y., Barragan-Montero, A., Schuemann, J., Pu, Y., Jiang, S. (2019, Jul.). Improving Proton Dose Calculation Accuracy Using Deep Learning. Snap oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

56) Barragan-Montero, A., Nguyen, D., Lu, W., Lin, M., Norouzi-Kandalan, R., Geets, X., Sterpin, E., Jiang, S. (2019, Jul.). Three-Dimensional Dose Prediction with Deep Learning for IMRT Treatments of Variable Beam Configuration. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

57) Shen, C., Nguyen, D., Gonzalez, Y., Chen, L., Jiang, S., Jia, X. (2019. Jul.) Operating a Treatment Planning System Using a Deep-Reinforcement-Learning Based Virtual Treatment Planner for Intensity-Modulated Radiation Therapy Treatment Planning. Science Council Session presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

58) Woods, K., Neph, R., Nguyen, D., O'Connor, D., Sheng, K. (2019, Jul.) Commissioning and Testing of the Sparse Orthogonal Collimator for Small Animal IMRT. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

59) McBeth, R., Nguyen, D., Jiang, S. (2019, Jul.). Quality Based Self-Evolving Training for a Deep Learning Based Dose Predictor for Head and Neck Patients. Snap oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

60) Liang, X., Gonzalez, Y., Nguyen, D., Zhang, Y., Jiang S. (2019, Jul.). Reconstructing CT Images From Cone-Beam CT Projections Using Learned Primal Dual Reconstruction. Snap oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

61) Ma, L., Chen, M., Nguyen, D., Jiang, S., Gu, X., Lu, W. (2019, Jul.). Direct Fluence Map Prediction From Beam Eye View of Targets and Organs. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

62) Ma, J., Nguyen, D., Jia, X., Lu, W., Zhou, L., Jiang, S. (2019, Jul.). Radiotherapy Dose Distribution Prediction Based On Patient Anatomy and Dose Volume Constraints. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

63) McBeth, R., Lin, M., Nguyen, D., Jiang, S. (2019, Jul.). Evaluation of Three Different Smart Assistants for Treatment Planning of VMAT Head and Neck Patients. General ePoster presentation

at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

64) Norouzi-Kandalan, R., Nguyen, D., Trivedi, Z., Lin, M., Barragan-Montero, A., McBeth, R., Yang, Q., Lu, W., Namuduri, K., Jiang, S. (2019, Jul.). Dose Prediction with Deep Learning for Prostate Cancer VMAT Treatments. Oral presentation at the American Association of Physicists in Medicine (AAPM) Annual Conference, San Antonio, TX, USA.

65) Jia, X., Wang, S., Liang, X., Balagopal, A., Nguyen, D., Ming, Y., Wang, Z., Ji, J., Qian, X., Jiang, S. (2019, Oct.). Cone-Beam Computed Tomography (CBCT) segmentation by adversarial learning domain adaptation. Poster presentation at the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

66) Yang, Q., Hongyang, C., Nguyen, D., Jiang, S. (2019, Oct.). A Novel Deep Learning Framework for Standardizing the Label of OARs in CT. Oral presentation at the 1st International Workshop on Artificial Intelligence in Radiation Therapy (AIRT), held in conjunction with the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

67) Ma, J., Bai, T., Nguyen, D., Folkerts, M., Jia, X., Lu, W., Zhou, L., Jiang, S. (2019, Oct.). Individualized 3D Dose Distribution Prediction Using Deep Learning. Oral presentation at the 1st International Workshop on Artificial Intelligence in Radiation Therapy (AIRT), held in conjunction with the 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

SKILLS

Area of Expertise

- Radiation Therapy
- Linear Programming
- Convex Optimization
- Primal-Dual Algorithms
- Proximal Algorithms
- Gradient Decent
- Machine Learning
- Linear Regression
- Logistic Regression
- Support Vector Machine
- Artificial Neural Networks
- Unsupervised Learning
- Image Segmentation
- Monte Carlo Simulation
- Mathematical Modeling
- GPU computing
- Statistics
- Data Analysis

Programming Languages

- Python
- C++
- CUDA
- MATLAB
- Java
- FORTRAN

Software

- Eclipse
- CVX
- CERR
- MIM
- Microsoft Visual Studio
- CPLEX
- MCNP
- FLUKA
- Microsoft Office Suite
- ROOT
- Wolfram Mathematica
- MATLAB

Equipment and Instrumentation

- Linac Operations
- Electrometer
- Film Scanning

- Water Chamber
- Dosimeter
- Oscilloscope

MEMBERSHIPS & EXTRACURRICULAR ACTIVITIES

American Association of Physicists in Medicine (AAPM):
Member 2013 – Present

UCLA Physics and Biology in Medicine Graduate Program (PBM):
Student Representative 2012 – 2017

UCLA Biological Sciences Council (BSC):
PBM Representative 2012 – 2016

UCLA Graduate Student Association (GSA) Forum:
BSC Representative 2012 – 2016

UT Society of Physics Students (SPS):
Member 2009 – 2012

UT Particle Accelerator Club (PAC):
Member 2010 – 2011