

# THE DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING SPEAKER SERIES

**PRESENTS**

## Artificial Intelligence in Cancer Research



### Steve Jiang

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**Monday, October 15, 12-1pm**  
**ECE Large Conference Room (D N328)**

### LECTURE ABSTRACT

The progress of artificial intelligence (AI) technologies has recently been exponential and shown to be both transformative and disruptive in many fields such as computer vision, natural language processing, audio processing, and automobile auto piloting. AI is expected to have a significant impact on healthcare, especially in the areas of individualized and precision medicine, medical image analysis, disease diagnosis assistance, treatment solution recommendation, care delivery optimization/automation/safety, treatment outcome and toxicity prediction, patient care in resource limited regions, medical error detection and quality assurance, assisted care and chronic disease management with wearable sensors, and surgical and rehabilitation robots. At the Medical Artificial Intelligence and Automation Laboratory (MAIA Lab), UT Southwestern Medical Center, we are working closely with clinicians and biologists to solve various important clinical problems in radiation therapy in specific and medicine in general. In this talk I will introduce our AI research work at MAIA Lab, mainly in the areas of organ segmentation and treatment target delineation, AI treatment planner, treatment outcome and toxicity prediction, peer review and error detection, image reconstruction, restoration, super-resolution, and interpretation, wearable sensors and smart clinic.

### SPEAKER BIOSKETCH

Dr. Steve Jiang received his Ph.D. in Medical Physics from Medical College of Ohio in 1998. After completing his postdoctoral training at Stanford University, he joined Massachusetts General Hospital and Harvard Medical School in 2000 as an Assistant Professor of Radiation Oncology. In 2007, Dr. Jiang was recruited to University of California San Diego as a tenured Associate Professor to build Center for Advanced Radiotherapy Technologies, for which he was the founding and executive director. He was then promoted to Full Professor with tenure in 2011. In October 2013, Dr. Jiang joined University of Texas Southwestern Medical Center as a tenured Full Professor, Barbara Crittenden Professor in Cancer Research, Vice Chair of Radiation Oncology Department, and Director of Medical Physics and Engineering Division. Dr. Jiang is a Fellow of Institute of Physics and American Association of Physicists in Medicine. Dr. Jiang's research in various areas of cancer radiotherapy has been funded by federal, state, charitable, and industrial grants for over 15 million dollars, resulting in over 170 peer-reviewed papers with an H-index of 67. His current research interest is on the development and deployment of artificial intelligence technologies to solve medical problems.

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