Informatics

Walk Through the Week

Demonstrations

National Cancer Institute (NCI) Crowds Cure Cancer
Session AI050 . . . . **Learning Center, Hall D**

National Cancer Institute (NCI) Perception Research Lab
Session DM100 . . . . **Learning Center, Hall D**

Computer Assisted Radiology and Surgery (CARS)
Session IN040 . . . . **IN Community, Learning Center**

The Society for Imaging Informatics in Medicine (SIIM)
Session IN041 . . . . **IN Community, Learning Center**

3D Printing Special Interest Group (SIG) Kiosk
Session IN042. . . . . **IN Community, Learning Center**

Common Data Elements (CDEs)
Session IN043. . . . . **IN Community, Learning Center**

RadReport
Session IN044. . . . . **IN Community, Learning Center**

RSNA Informatics

RSNA is working to help radiologists get the greatest possible benefit from information technology. Working with domain experts and partner organizations, RSNA has developed a coordinated set of informatics resources that enable improvements in efficiency and quality, helping radiologists demonstrate value in the evolving health system.

To enable radiologists to produce consistent, detailed clinical data that can be used for analytics and other computer applications, RSNA publishes:

•**RadLex** – a unified terminology for radiology

•**The LOINC/RSNA Radiology Playbook** – a comprehensive set of radiology procedure names

•**RadElement** – a registry of common data elements for use in reports and decision support

•**RadReport** – a library of structured reporting templates for common radiology procedures

We invite you to use these resources—and to join in helping to develop and promote them. Visit *RSNA.org* for more information and send your inquiries to *informatics@rsna.org*.

Saturday, Nov. 30, 2019

12:00–2:00 PM
Educational Courses
AAPM/RSNA Physics Tutorial Session 1
Session SPPH01 . . . . .E351

Sunday, Dec. 1, 2019

10:30 AM–12:00 PM
Educational Courses
RSNA AI Deep Learning Lab: Beginner Class: Classification Task (Intro)
Session SPAI11 . . . . **AI Showcase North Building Level 2**

10:45 AM–12:15 PM
Scientific Papers Sessions
Science Session with Keynote: Informatics (Artificial Intelligence: Cutting Edge Artificial Intelligence)
Session SSA12 . . . . **E450A**

11:00 AM–12:30 PM
Educational Courses
Hands-on Introduction to Social Media (Hands-on)
Course RCA11 . . . . **S401AB**

CT Protocol Management Across a Healthcare System
Course RCC11 . . . . **S406B**

12:30–1:00 PM
Posters and Exhibits: Discussions
Artificial Intelligence Sunday Poster Discussions
Session AIS-SUA . . . . . . AI Community, Learning Center

Informatics Sunday Poster Discussions
Session INS-SUA . . . . . . IN Community, Learning Center

1:00–1:30 PM
Posters and Exhibits: Discussions
Artificial Intelligence Sunday Poster Discussions
Session AIS-SUB . . . . . . AI Community, Learning Center

Informatics Sunday Poster Discussions
Session INS-SUB . . . . . . IN Community, Learning Center

2:00–3:30 PM
Educational Courses
Using Imaging Informatics to Enable Patient Experience
Improvements in Radiology
Course RC153 . . . . S406B

Cinematic Rendering: Principles, Pearls, and Clinical
Applications
Course RC154 . . . . .E352

Hands-on Artificial Intelligence for Non-coders: How is an
Intracranial Hemorrhage Detection Algorithm Created?
(Hands-on)
Course RCA12 . . . . S401AB

Ethics of AI in Radiology: Summary of the European and
North American Multisociety Statement
Course RCC12 . . . . .E451A

3:00–4:30 PM
Educational Courses
RSNA AI Deep Learning Lab: Data Science: Data Wrangling
Session SPAI13 . . . . AI Showcase North Building Level 2

4:00–5:30 PM
Educational Courses
Hands-on Artificial Intelligence for Non-coders: Object
Localization and Image Segmentation (Hands-on)
Course RCA13 . . . . S401AB

Creating Publicly Accessible Radiology Imaging Resources for
Machine Learning and AI
Course RCC13 . . . . E353C

Monday, Dec. 2, 2019

8:30–10:00 AM
Educational Courses
Getting Stuff Done: A Mindful Approach to Personal
Productivity
Course RC253 . . . . S503AB

Integrating the Healthcare Enterprise on Fast Healthcare
Interoperability Resources
Course RC254 . . . . N226

An Introduction to Using the NIH/NCI's Cancer Imaging
Archive (TCIA) (Hands-on)
Course RCA21 . . . . S401AB

Core Cybersecurity for Imaging Departments and Imagers:
Threats, Vulnerabilities and Best Practices
Course RCC21 . . . . S404CD

10:30 AM–12:00 PM
Educational Courses
Getting Stuff Done: A Hands-on Technology Workshop to
Enhance Personal Productivity (Hands-on)
Course RCA22 . . . . S404CD

Novel Discoveries Using the NCI's Cancer Imaging Archive
(TCIA) Public Data Sets
Course RCC22 . . . . E353A

RSNA AI Deep Learning Lab: Beginner Class: Classification
Task (Intro)
Session SPAI21 . . . . AI Showcase North Building Level 2

10:30 AM–12:00 PM
Scientific Papers Sessions
Informatics (Artificial Intelligence: Bleeding Edge)
Session SSC08 . . . . E450A

11:00–11:20 AM
Showcase Presentations
RSNA AI Theater: Unlocking the Value in Imaging Archives:
Presented by OneMedNet Corporation
Session AI22 . . . . . . AI Showcase North Building Level 2

12:00–12:20 PM
Showcase Presentations
RSNA AI Theater: AI Integrated in Daily Workflow with QUIBIM
Precision: Visualize, Annotate, Quantify, Report and Discover:
Presented by QUIBIM
Session AI24 . . . . . . AI Showcase North Building Level 2

12:15–12:45 PM
Posters and Exhibits: Discussions
Artificial Intelligence Monday Poster Discussions
Session AIS-MOA . . . . . . AI Community, Learning Center

Informatics Monday Poster Discussions
Session INS-MOA . . . . . . IN Community, Learning Center

12:30–2:00 PM
Educational Courses
Making the Most of Google Docs: Forms, Sheets, and
Documents (Hands-on)
Course RCA23 . . . . S401AB

Want to Learn More About Imaging Informatics? Education,
Resources, and Certifications
Course RCC23. . . . . N226

12:30–1:30 PM
Lunch and Learns
Lunch and Learn: Putting AI into Practice: Today's Clinical
Successes and Considerations for AI Deployment in the
Radiologist Workflow: Presented by Fujifilm Medical Systems
(RSVP-required)
Session LL13 . . . . S403A

12:45–1:15 PM
Posters and Exhibits: Discussions
Artificial Intelligence Monday Poster Discussions
Session AIS-MOB . . . . . . AI Community, Learning Center

Informatics Monday Poster Discussions

Session INS-MOB . . . . . . IN Community, Learning Center

1:00–2:30 PM
Educational Courses
RSNA AI Deep Learning Lab: Data Science: Data Wrangling
Session SPAI22 . . . AI Showcase North Building Level 2

1:30–1:50 PM
Showcase Presentations
RSNA AI Theater: It's Real, It Works and It's Now! Take AI Out
of the Lab and into Clinical Practice: Presented by Infervision
Session AI27. . . . . . AI Showcase North Building Level 2

2:30–4:00 PM
Educational Courses
RSNA Diagnosis Live Interactive and Mobile Device Integrated
Audience Response: Tips, Tricks, and How to Get Started
(Hands-on)
Course RCA24 . . . . S401AB

Interoperability: Imaging and Beyond-Integrating the
Healthcare Enterprise, Standards, and the RSNA Image Share
Course RCC24. . . . . N226

3:00–4:00 PM
Scientific Papers Sessions
Informatics (Artificial Intelligence: Triage, Screening, Quality)
Session SSE14 . . . . S406B

4:30–6:00 PM
Educational Courses
Augmented and Virtual Reality
Course RCC25. . . . . .E451A

Tuesday, Dec. 3, 2019

8:30–10:00 AM
Educational Courses
Enterprise Imaging for the Practicing Radiologist
Course RC353. . . . . S504AB

How Did I Miss That? Perceptual and Attentional Roots of
Medical Errors
Course RC354. . . . . S404CD

Creating Patient-Specific Anatomical Models for 3D Printing
and AR/VR (Hands-on)
Course RCA31. . . . . S401AB

Advanced Cybersecurity for Imaging Departments and
Imagers: Threats, Vulnerabilities, and Best Practices
Course RCC31 . . . . S501ABC

9:00–10:30 AM
Corporate Symposium
Creating Winning Workflows: Identifying Pain Points and
Solutions within Radiology Workflow: Presented by Philips
Session CS31 . . . . .S101AB

10:30 AM–12:00 PM
Educational Courses
Quality Improvement Symposium: Patient-centered Care
Course MSQI32. . . . . .S402AB

Understanding Anorectal and Cloacal Malformations with 3D
Printed Models (Hands-on)
Course RCA32. . . . . S401AB

Radiology Informatics Mistakes and War Stories from the
Physician Front Lines
Course RCC32. . . . . N226

10:30 AM–12:00 PM
Scientific Papers Sessions
Informatics (Artificial Intelligence: NLP and Reporting)
Session SSG06 . . . . S406A

12:15–12:45 PM
Posters and Exhibits: Discussions
Artificial Intelligence Tuesday Poster Discussions
Session AIS-TUA . . . . . . **AI Community, Learning Center**

Informatics Tuesday Poster Discussions
Session INS-TUA . . . . . . **IN Community, Learning Center**

12:30–2:00 PM
Educational Courses
Hands-on Artificial Intelligence for Non-coders: Object
Localization and Image Segmentation (Hands-on)
Course RCA33. . . . . S401AB

Medical 3D Printing: How to Start?
Course RCC33. . . . . .E351

12:30–1:30 PM
Lunch and Learns
Lunch and Learn: Maturing Your Organization's Capability to
Develop and Utilize Heterogenous, Longitudinal, and
Regulatory Grade Real-world Evidence: Presented by Life
Image (RSVP-required)
Session LL21. . . . . S403B

12:45–1:15 PM
Posters and Exhibits: Discussions
Artificial Intelligence Tuesday Poster Discussions
Session AIS-TUB . . . . . . **AI Community, Learning Center**

Informatics Tuesday Poster Discussions
Session INS-TUB . . . . . . **IN Community, Learning Center**

1:00–2:30 PM
Vendor Workshops
Head-to-toe hands-on with AI and imaging biomarkers
integrated in PACS. QUIBIM Precision: Presented by
QUIBIM SL
Session HW32. . . . . . **AI Showcase North Building Level 2**

2:00–3:30 PM
Corporate Symposium
Efficiency and Risk Management in the CT Suite: Becoming
Your Ultimate Diagnostic Partner: Presented by Bracco
Diagnostics, Inc.
Session CS36 . . . . S105D

2:30–4:00 PM
Educational Courses
Hands-on Artificial Intelligence for Non-coders: How is an
Intracranial Hemorrhage Detection Algorithm Created?
(Hands-on)
Course RCA34 . . . . S401AB

Reimbursement Topics in 3D Printing
Course RCC34. . . . . .E351

3:00–4:30 PM
Educational Courses
RSNA AI Deep Learning Lab: Beginner Class: Classification
Task (Intro)
Session SPAI33 . . . **AI Showcase North Building Level 2**

3:00–4:00 PM
Scientific Papers Sessions
Informatics (3D Printing, Augmented Reality, and Virtual
Reality)
Session SSJ13 . . . . S501ABC

4:30–6:00 PM
Educational Courses
Structured Reporting: How Can We Make it Better?
Course RC453. . . . . N228

Platforms and Infrastructures for Accelerated Discoveries in
Machine Learning and Radiomics
Course RC454. . . . . S403B

Virtual Reality (VR) Improves Analysis of Complex Brain and
Skull Base Tumors (Hands-on)
Course RCA35. . . . . S401AB

Getting Stuff Done: A Mindful Approach to Personal
Productivity
Course RCC35. . . . . S103CD

Wednesday, Dec. 4, 2019

8:30–10:00 AM
Educational Courses
The RSNA Technology Stack for Semantics and Reporting:
RadLex, RadElement and RadReport
Course RC553. . . . . S103AB

Deep Learning in Radiology: How Do We Do It?
Course RC554. . . . . S406B

Image to 3D Prints: How 3D Printing Works (Hands-on)
Course RCA41. . . . . S401AB

Technologies for Creating Educational Content and Teaching Files
Course RCC41 . . . . **S403A**

9:20–10:20 AM
Educational Courses
ASRT@RSNA 2019: 3D Printing from the Radiologic Technologist's Point of View
Course MSRT42 . . . . **N230B**

10:30 AM–12:00 PM
Educational Courses
Getting Stuff Done: A Hands-on Technology Workshop to Enhance Personal Productivity (Hands-on)
Course RCA42 . . . . **S401AB**

Preparing your Radiology Practice and IT Department for Big Data
Course RCC42. . . . . **S406B**

12:15–12:45 PM
Posters and Exhibits: Discussions
Artificial Intelligence Wednesday Poster Discussions
Session AIS-WEA . . . . . . **AI Community, Learning Center**

Informatics Wednesday Poster Discussions
Session INS-WEA . . . . . . **IN Community, Learning Center**

12:30–2:00 PM
Educational Courses
Hands-on Introduction to Social Media: Advanced (Hands-on)
Course RCA43 . . . . **S401AB**

Regulatory Considerations for Hospital-based 3D Printing
Course RCC43. . . . . **E353B**

12:45–1:15 PM
Posters and Exhibits: Discussions
Artificial Intelligence Wednesday Poster Discussions
Session AIS-WEB . . . . . . **AI Community, Learning Center**

Informatics Wednesday Poster Discussions
Session INS-WEB . . . . . . **IN Community, Learning Center**

2:30–4:00 PM
Educational Courses
PowerPoint Tips (Hands-on)
Course RCA44 . . . . **S401AB**

Clinical Decision Support: From Theory to Clinical Practice
Course RCC44. . . . . **S406B**

3:00–4:30 PM
Educational Courses
RSNA AI Deep Learning Lab: Beginner Class: Classification Task (Intro)
Session SPAI43 . . . **AI Showcase North Building Level 2**

3:00–4:00 PM
Scientific Papers Sessions
Informatics (Artificial Intelligence: Generative Adversarial Networks)
Session SSM14 . . . . **E353C**

Informatics (Image Sharing, Data, Security, Quality)
Session SSM15 . . . . **E353B**

4:30–6:00 PM
Educational Courses
Deploying an Open-Source DICOM Archive and Web Viewer with OHIF and Orthanc (Hands-on)
Course RCA45 . . . . **S401AB**

Imaging in Proteogenomics Research
Course RCC45. . . . . **E353B**

Thursday, Dec. 5, 2019

8:30–10:00 AM
Educational Courses
Reporting Skills: Improving Our Reports and Those of Others (Interactive Session)
Course RC602. . . . . **S102CD**

Secure Image Sharing for Education and Patient Care in Radiology
Course RC653. . . . . **S501ABC**

Deep Learning & Machine Intelligence in Radiology
Course RC654. . . . . **S406B**

How to Prepare 3D Models to Develop Multi-material 3D Printed Vascular Phantoms (Hands-on)
Course RCA51. . . . . **S401AB**

Artificial Intelligence: Beyond Interpretive Considerations
Course RCC51 . . . . **E353C**

10:30 AM–12:00 PM
Educational Courses
Work Smarter, Not Harder: Reading Room Efficiencies and Ergonomics (Hands-on)
Course RCA52. . . . . **S401AB**

Applications and Simulations in 3D Medical Printing
Course RCC52. . . . . **E451B**

RSNA AI Deep Learning Lab: Data Science: Data Wrangling
Session SPAI51. . . . AI Showcase North Building Level 2

10:30 AM–12:00 PM
Scientific Papers Sessions
Informatics (Education, Analytics, Quantitative)
Session SSQ11 . . . . N229

12:15–12:45 PM
Posters and Exhibits: Discussions
Artificial Intelligence Thursday Poster Discussions
Session AIS-THA . . . . . . AI Community, Learning Center

Informatics Thursday Poster Discussions
Session INS-THA . . . . . . IN Community, Learning Center

12:30–2:00 PM
Educational Courses
Querying, Parsing, and Extracting DICOM Data: Basic
Functionality with Real-World Use Cases and Applications
(Hands-on)
Course RCA53. . . . . S401AB

Next Generation Reporting: Informatics to Improve the Value
of Reporting
Course RCC53. . . . . E351

12:45–1:15 PM
Posters and Exhibits: Discussions
Artificial Intelligence Thursday Poster Discussions
Session AIS-THB . . . . . . AI Community, Learning Center

Informatics Thursday Poster Discussions
Session INS-THB . . . . . . IN Community, Learning Center

2:30–4:00 PM
Educational Courses
Generating AutoHotkey Scripts to Automate Repetitive Tasks
and Optimize Radiology Workflow (Hands-on)
Course RCA54 . . . . S401AB

Building a Social Media and Web Brand
Course RCC54. . . . . E351

4:30–6:00 PM
Educational Courses
Introduction to Medical 3D Printing
Course RC753. . . . . S406B

Patient-centric Radiology: How to Do It
Course RC754. . . . . S403B

Intro to Statistics with R (Hands-on)
Course RCA55. . . . . S401AB

Deep Learning-An Imaging Roadmap
Course RCC55. . . . . E450A

Friday, Dec. 6, 2019

8:30–10:00 AM
Educational Courses
AI, Radiomics, Text Mining, and More: 2019's Key Advances in
Imaging Informatics
Course RC853. . . . . E450A

Posters and Exhibits Discussions

*(CME is available when the author is present for discussion
during the lunch period)*

Sunday, Dec. 1, 2019

12:30–1:00 PM
Scientific Posters
Accuracy of Coronary Artery Calcium Score on Low-dose
Screening Chest CT by using Deep Learning-based Denoising
and Kernel Conversion
IN203-SD-SUA4 . . . . Station #4

Comparative Study on the Efficacy of Deep-Learning-Based
Detection of Pulmonary Nodules of Different Sizes between
Single-Source and Dual-Source Mode
AI224-SD-SUA1 . . . . Station #1

Comparison of Image Quality Between Conventional 120kVp
and Dual-energy 120kVp-Like Images in Upper Abdominal CT
IN263-SD-SUA5 . . . . Station #5

Comparison of Radiomics-based Feature Reduction Methods
and Machine Learning Classifiers for Prognostic Biomarkers
of Glioma Grading
IN252-SD-SUA3 . . . . Station #3

Deep Learning with Multiclass Deep Convolutional Neural
Networks to Detect Prostate Cancer on Multiparametric MRI
Images Using a Multi-Institution Patient Cohort
AI267-SD-SUA3 . . . . Station #3

Evaluation of an Artificial Intelligence-Based Double Read
System in Capturing Pulmonary Nodule Discrepancy in CT
Studies
IN220-SD-SUA6 . . . . Station #6

Feasibility of Nakagami Parametric Imaging for Texture
Analysis of Ultrasound Images
IN231-SD-SUA2 . . . . Station #2

Optimizing Distributed Deep Learning Methods for Medical Image Data Heterogeneity Across Institutions
AI237-SD-SUA2 . . . . **Station #2**

The Effect of Radiation Dose on the Characterization of Ground Glass Nodules: A Thoracic Phantom Study
IN223-SD-SUA1 . . . . **Station #1**

12:30–1:00 PM
Education Exhibits
A Practical Guide to Natural Language Processing for Radiology
AI139-ED-SUA4 . . . . **Station #4**

National Cancer Institute Imaging Data Commons
IN017-EC-SUA . . . . **Custom Application Computer Demonstration**

1:00–1:30 PM
Scientific Posters
A Proper Statistical Method for Comparing Diagnostic Performances Between Stand-alone Artificial Intelligence System and Multiple Readings from Multi-reader Diagnostic Performance Study
IN219-SD-SUB1 . . . . **Station #1**

Feasibility of Adaptive Statistical Iterative Reconstruction-V Algorithm combination with 80kV for Reducing Radiation Dose and Contrast Agent in Computed Tomography Portal Venography: comparison with Adaptive Statistical Iterative Reconstruction
IN274-SD-SUB3 . . . . **Station #3**

Fully Automatic Deep-Learning System to Select L3 Slice and Measure Abdominal Muscle Area on CT
AI217-SD-SUB1 . . . . **Station #1**

Getting AI Ready for Deployment: Tuning Algorithms to Specific Sites Using a Single Chest X-Ray Image
AI261-SD-SUB2 . . . . **Station #2**

Implementation of a Clinical Decision Support System for Alerting the Physician to Repeat Imaging Examination Orders
IN268-SD-SUB4 . . . . **Station #4**

Repeatability of Machine Learning Classification of Prostate Cancer using Diffusion Weighted Imaging: Short-Term Repeatability Study of 112 Men Who Underwent Two Prostate MR Examinations Before Prostatectomy
AI209-SD-SUB3 . . . . **Station #3**

The Value of Radiomics in the Quality Control of Low-dose CT Examinations of Solid Pulmonary Nodules – A Phantom Study
IN276-SD-SUB5 . . . . **Station #5**

Understanding Potential Customers of an In-House 3D Print Lab - A Survey amongst Physicians of Their Awareness, Needs and Comprehension of 3D Printing Technology
IN243-SD-SUB2 . . . . **Station #2**

1:00–1:30 PM
Education Exhibits
Artificial Intelligence-Driven Imaging for Ultra-Fast MRI: Cutting-Edge Technology and Clinical Application
IN140-ED-SUB6 . . . . **Station #6**

Assessing the Accuracy, Reproducibility and Repeatability of Novel Quantitative Approach to MRCP Imaging
IN005-EB-SUB . . . . **Hardcopy Backboard**

Clinical Decision Support System Designed for Radiologists Employing Common Data Elements and Diagnostic Templates
IN025-EC-SUB . . . . **Custom Application Computer Demonstration**

Content-Based Image Retrieval for Searching Similar Chest CT with Diffuse Interstitial Lung Disease and Chronic Obstructive Lung Disease with Quantitative and CNN Features
AI003-EC-SUB . . . . **Custom Application Computer Demonstration**

Correlation between Texture Features of Abdominal Skeletal Muscles and Recurrent Gastroesophageal Hemorrhage After Secondary Prophylaxis in Cirrhosis
IN007-EB-SUB . . . . **Hardcopy Backboard**

High-Resolution Medical Image Generation and Disentanglement Using Progressive Growing of Generative Adversarial Networks: Possible Applications and Limitations
IN010-EB-SUB . . . . **Hardcopy Backboard**

Reproducibility of Quantitative Features in Prostate mpMRI
IN006-EB-SUB . . . . **Hardcopy Backboard**

Monday, Dec. 2, 2019

12:15–12:45 PM
Scientific Posters
Artificial Intelligence-Assisted Breast Cancer Risk Assessment
AI258-SD-MOA2 . . . . **Station #2**

Automated Quality Control of Adult Frontal Chest X-Ray with Deep Artificial Neural Networks
AI273-SD-MOA3 . . . . **Station #3**

Clinical Value of Conventional and Enhanced MRI Texture Analysis for Preoperative Grading of Meningiomas
IN253-SD-MOA2 . . . . **Station #2**

CT Angiography of the Abdominal Aorta and Lower
Extremities in Patients with Chronic Kidney Disease: A Low
Contrast Dose Protocol using Dual-Energy CT
IN204-SD-MOA1 . . . . **Station #1**

Deep Learning Model based on Multiple Computed
Tomography Observation Window Setting Inputs for
Pulmonary Nodule Detection
IN222-SD-MOA3 . . . . **Station #3**

Digital Health Solution Tools: A Trend that Physicians Should
Follow to Engage More with Their Patients
IN210-SD-MOA6 . . . . **Station #6**

Holographic Light Field Displays for 3D viewing
IN271-SD-MOA4 . . . . **Station #4**

Identifying Areas for Operational Improvement and Growth
Opportunities in IR Workflow Using Workflow Modeling,
Simulation and Optimization Techniques
IN248-SD-MOA5 . . . . **Station #5**

Impact of Image Resolution on Deep-Learning Performance
for Pneumothorax Identification
AI241-SD-MOA1 . . . . **Station #1**

12:15–12:45 PM
Education Exhibits
A DICOM-Embedded Annotation System for 3D Cross-
Sectional Imaging Data

IN026-EC-MOA . . . . **Custom Application Computer
Demonstration**

Inkjet-Printed Hybrid Anthropomorphic CT Phantoms of
Chronic Obstructive Pulmonary Diseases
IN015-EB-MOA . . . . **Hardcopy Backboard**

NLP Can Accurately Extract Reports Containing Pulmonary
Artery Enlargement Based on a Relatively Small Amount of
Training Data
IN008-EB-MOA . . . . **Hardcopy Backboard**

Preventing Gender and Laterality Discrepancies in Radiology
Reporting
IN016-EB-MOA . . . . **Hardcopy Backboard**

12:45–1:15 PM
Scientific Posters
Application of Model-Based Iterative Reconstruction in
Reducing Radiation Dose and Improving Low-Dose Abdominal
CT Image Quality
IN275-SD-MOB1 . . . . **Station #1**

Automatic Detection of Critical Findings in Brain MRI Exams
Using Residual Convolutional Neural Networks
AI255-SD-MOB3 . . . . **Station #3**

Craniomaxillofacial Landmarks Detection on CBCT Images
using 3D Mask-RCNN For Craniomaxillofacial Surgery
IN264-SD-MOB2 . . . . **Station #2**

CT Image Retrieval Based on Morphological Similarities in
Diffuse Lung Diseases Using a Deep Convolutional Neural
Network
AI211-SD-MOB1 . . . . **Station #1**

Implementation of An Onsite Medical Display Device Quality
Control Program
IN229-SD-MOB3 . . . . **Station #3**

The Implementation of Natural Language Processing to
Extract Index Lesions from Breast Magnetic Resonance
Imaging Reports
IN265-SD-MOB4 . . . . **Station #4**

Transfer Learning Approach to Generalize a State-of-the-Art
Prostate Segmentation Model
AI257-SD-MOB2 . . . . **Station #2**

12:45–1:15 PM
Education Exhibits
A Conversational Natural Language Processing (NLP) Model
used to Scale Quality Improvement (QI) Processes for
Tracking Radiologist Follow-Up Recommendations
AI023-EB-MOB . . . . **Hardcopy Backboard**

Deep Learning Image Reconstruction Artifacts: What the
Radiologist Needs to Know
IN142-ED-MOB6 . . . . **Station #6**

Development of a Tracking System for PET/CT Exams That
Integrates PET Image Quality Metrics and Radiation Dose
Information from Both Modalities
IN027-EC-MOB . . . . **Custom Application Computer
Demonstration**

Dual Output V-Net CNN: A Virtual Iodinated Contrast Media
Injection in Chest CT Toward a New Cardiac Risk Assessment
AI022-EB-MOB . . . . **Hardcopy Backboard**

How to Create a Great Radiology Report
IN143-ED-MOB5 . . . . **Station #5**

MRQuantif: A Software Program for Quantifying Liver Fat and
Iron
IN028-EC-MOB . . . . **Custom Application Computer
Demonstration**

Tuesday, Dec. 3, 2019

12:15–12:45 PM
Scientific Posters
AI Radiomics in a Monogenic Autoimmune Disease: Deep Learning of Routine Radiologist Annotations Correlated with Pathologically Verified Lung Findings
IN212-SD-TUA1 . . . . **Station #1**

An Automated Informatics-based Repeat/Reject Rate Algorithm for CT
IN251-SD-TUA3. . . . . **Station #3**

Artificial Intelligence in Radiology Literature: Trends in Publication from 2008-2017
IN236-SD-TUA2 . . . . **Station #2**

CT Attenuation Characteristics of 3D Printed Materials
IN232-SD-TUA5 . . . . **Station #5**

Fully-Automated Open-Source Critical Findings Notification System
IN214-SD-TUA4 . . . . **Station #4**

Sustainability of an Automated CT Protocol Selection System Based on Machine Learning and Natural Language Processing
IN240-SD-TUA6 . . . . **Station #6**

12:15–12:45 PM
Education Exhibits
Computer-Aided Assessment of Catheters and Tubes on Radiographs: How Good is Artificial Intelligence for Assessment?
AI148-ED-TUA3 . . . . **Station #3**

Generative Adversarial Networks (GANs): A Primer for Radiologists
AI145-ED-TUA2 . . . . **Station #2**

Interactively-Trained Segmentation Tool Leveraging Machine Learning and Geodesic Distance
IN030-EC-TUA . . . . **Custom Application Computer Demonstration**

Platform for Development and Deployment of Computer-Assisted Reporting & Decision Support at the Radiologist Point-of-Care: What Radiologists Should Know
IN144-ED-TUA7. . . . . **Station #7**

Practical Guide to Natural Language Processing Research in Radiology
AI141-ED-TUA1 . . . . **Station #1**

The Quantitative Image Feature Pipeline (QIFP): Automated Computation of Quantitative Image Features for Prediction of Clinical Characteristics (e.g., Malignancy, Response to Therapy, Overall Survival) in Subject Cohorts
IN029-EC-TUA . . . . **Custom Application Computer Demonstration**

Using the Open Health Imaging Foundation (OHIF) Framework to Build Web-Based Imaging Applications
IN019-EC-TUA. . . . . **Custom Application Computer Demonstration**

Virtual Dynamic Contrast-enhanced CT (vDCE-CT): A Novel Method for Quantification of Tissue Perfusion and Reconstruction of DCE-CT Image at Any Temporal Window Using Routine Abdominal DCE-CT Protocol
IN031-EC-TUA. . . . . **Custom Application Computer Demonstration**

12:45–1:15 PM
Scientific Posters
Actionable Findings in Daily Clinical Practice
IN215-SD-TUB5 . . . . **Station #5**

Automatic Extraction of Imaging Observations and Assessment Categories from Breast Magnetic Resonance Imaging Reports with Natural Language Processing
IN266-SD-TUB4 . . . . **Station #4**

Automatic Segmentation of 3D Hip Ultrasound for Detection of Hip Dysplasia
AI205-SD-TUB2 . . . . **Station #2**

Clinical Usability Scores For PI-RADSv2 Conform Structured Multi-Parametric MRI Reports of The Prostate Using Natural Language Processing-Based RadLex® Mapping
IN228-SD-TUB7 . . . . **Station #7**

Convolutional Neural Network for Respiratory Motion Artifact Reduction in Multiphasic Liver MRI: Network Architecture and Clinical Evaluation
AI226-SD-TUB1 . . . . **Station #1**

Inter-operator Variability in Diffusion Tensor Imaging Tractography for Tumor Resection Surgical Planning
IN260-SD-TUB3 . . . . **Station #3**

Paging Dr. Robot: A Chat Bot With a Machine Learning Algorithm for Predicting Pediatric Bone Age Through Hand-Wrist X-Rays
AI225-SD-TUB3 . . . . **Station #3**

Renal Parenchyma Segmentation using the Combined 2D and 3D Segmentation Networks for Analysis of Volume Changes of Contralateral Hypertrophy after Robot-assisted Partial Nephrectomy in Abdominal CT Images
IN213-SD-TUB6. . . . . **Station #6**

ROSA Robot Rehearsal: Utilizing 3D Printing to Facilitate the Integration of Robotic Stereotactic Assistance (ROSA) in Neurosurgery
IN249-SD-TUB2 . . . . **Station #2**

Visceral Fat Quantification in Abdominal Computed Tomography Using Deep Learning
IN238-SD-TUB1 . . . . **Station #1**

12:45–1:15 PM
Education Exhibits
A Filter-Level Pruning Method for More Efficient Deep Learning Inference on Medical Images
AI024-EB-TUB . . . . **Hardcopy Backboard**

An Interactive Web-Based Application for Enhanced Multi-Parametric Prostate MRI Training with Whole Mount Histology Correlation
IN018-EC-TUB . . . . **Custom Application Computer Demonstration**

Creating an Integrated Research Platform of the Basis of Clinical PACS
IN009-EB-TUB . . . . **Hardcopy Backboard**

Development of TextIriX: A Texture Analysis Plugin for OsiriX
IN032-EC-TUB . . . . **Custom Application Computer Demonstration**

Open Source Platform and Cockpit for Storage and Sharing of Large Imaging Biobanks
IN033-EC-TUB . . . . **Custom Application Computer Demonstration**

Wednesday, Dec. 4, 2019

12:15–12:45 PM
Scientific Posters
3D Ultrasound-Based Measurement of Hydronephrosis Index to Assess the Severity of Pediatric Hydronephrosis
IN244-SD-WEA1 . . . . **Station #1**

A Machine Learning Approach of Support Vector Machine for Preoperative Prediction of Lymph Node Status in Intrahepatic Cholangiocarcinoma
AI221-SD-WEA1 . . . . **Station #1**

An Interpretable Generative Model for Chest X-Ray Decomposition via Synthesizing Radio-Realistic Normal Chest X-Rays and Separating Abnormalities
AI269-SD-WEA4 . . . . **Station #4**

Automatic Prediction of Optimal MRI Protocols Using Encoder-Decoder Model
AI201-SD-WEA2 . . . . **Station #2**

Automatic Structuring of Sentences in Chest X-ray Reports to Enable Structured Reporting
IN256-SD-WEA5 . . . . **Station #5**

Collaborative Robotics for Image-Guided Interventions in a Standardized Network for Clinical Environments
IN218-SD-WEA6 . . . . **Station #6**

Early Experience Implementing a Web-based Interface to Annotate Breast Imaging Reports with Patent-oriented Definitions
IN216-SD-WEA2 . . . . **Station #2**

Engaging High-Risk Patients to Attend MRI Appointments Using a Scripted Phone Call: A Pilot Trial
AI207-SD-WEA3 . . . . **Station #3**

Improving Communication between Radiologists, Pathologists, and Urologists by using a PI-RADS Structured Reporting System
IN235-SD-WEA3 . . . . **Station #3**

Paradigm Shift in Diagnostic Radiology Training using Simulation Workshops: Intracranial Malignancies
IN247-SD-WEA4 . . . . **Station #4**

12:15–12:45 PM
Education Exhibits
Continuous Improvement of LSTM Deep Learning NLP Algorithm to Predict Post-Procedure Exams for Worklist Prioritization Using API for Retraining and Redeployment
AI006-EC-WEA . . . . **Custom Application Computer Demonstration**

Creating Annotated Image Datasets to Support Deep Learning Training and Validation
AI005-EC-WEA . . . . **Custom Application Computer Demonstration**

Knowledge Distillation for U-Net on Medical Images
AI025-EB-WEA . . . . **Hardcopy Backboard**

PACS Replacement Part I: Steps to Successful Selection from Discovery to Contract
IN146-ED-WEA7 . . . . **Station #7**

Unsupervised Anomaly Detection on Medical Images with Generative Adversarial Networks: Strengths and Weaknesses
AI012-EB-WEA . . . . **Hardcopy Backboard**

12:45–1:15 PM
Scientific Posters
Association Rule Learning May Estimate Individual Risk for Contrast-Induced Acute Kidney Injury
AI227-SD-WEB2 . . . . **Station #2**

Automated Pancreas Segmentation Based on Multi-modal Fusion of Dual-energy CT Images
IN270-SD-WEB1 . . . . **Station #1**

Disentangled Feature Representation of Pulmonary Diseases in the Latent Space of Progressive Growing of Generative Adversarial Networks in Chest PA X-Ray Images
AI233-SD-WEB4 . . . . **Station #4**

Mobile Deployment of a Convolutional Neural Network which Identifies Pacemakers and Implantable Defibrillators on Chest Radiographs
AI230-SD-WEB1 . . . . **Station #1**

Study on the Detection Capability Alteration of AI Assisted Software in Detecting Subsolid Pulmonary Nodules by Residents in Radiology Department
IN246-SD-WEB2 . . . . **Station #2**

Sub-Region based Radiomics Analysis for Survival Prediction in Oesophageal Tumors Treated by Definitive Concurrent Chemoradiotherapy
AI242-SD-WEB3 . . . . **Station #3**

Tofu: For Stir-Fry and Ultrasound Procedural Training
IN206-SD-WEB3 . . . . **Station #3**

12:45–1:15 PM
Education Exhibits
Essential Operations and Workflow in the 3D Printing Anatomic Modeling Lab
IN013-EB-WEB . . . . **Hardcopy Backboard**

Learning-Based MR-CT Registration for Guiding Thermal Ablation of Liver Tumors
AI007-EC-WEB . . . . **Custom Application Computer Demonstration**

PACS Replacement Parts II: Steps to Successful Implementation - From Contract to Go-Live
IN147-ED-WEB4 . . . . **Station #4**

RIL-Contour: A Collaborative Medical Imaging Dataset Annotation Tool Designed to Accelerate Dataset Annotation For and With Deep Learning
AI008-EC-WEB . . . . **Custom Application Computer Demonstration**

Thursday, Dec. 5, 2019

12:15–12:45 PM
Scientific Posters
An Artificial Intelligence Solution for Detecting Significant Pneumothorax on Chest Radiographs: Experience on a Real-World Dataset and Potential Impact on Turnaround Time at an Academic Tertiary Medical Center
AI239-SD-THA2 . . . . **Station #2**

Determining Brain Age Using Machine Learning Combined with Automated Brain Segmentation and PET imaging In Normal, Alzheimer's Disease and Mild Cognitive Impairment Subjects
AI262-SD-THA1 . . . . **Station #1**

MRI Texture Analysis for Differentiating Solitary Fibrous Tumors/Hemangiopericytoma from Angiomatous Meningioma
IN254-SD-THA1 . . . . **Station #1**

Performance Evaluation of the ABC/2 Method and Deep Learning-Assisted Algorithm in Measuring the Volume of Intraparenchymal Hematoma
AI277-SD-THA3 . . . . **Station #3**

Radiomics Could Improve Predictive Performance of Overall Survival in Patients with Hepatocellular Carcinoma (HCC)
IN234-SD-THA3 . . . . **Station #3**

Therapeutic Pancreatic Cancer Tumor Analysis in CT Images using Global Atlas, Multi-Resolution Convolutional Neural Network and Wavelet Volumetric Shape Extraction
IN259-SD-THA2 . . . . **Station #2**

12:15–12:45 PM
Education Exhibits
ePAD-AI: A Platform for Standards-Based Collaborative AI Application Development in Medical Imaging
AI010-EC-THA . . . . **Custom Application Computer Demonstration**

How to Build a Reliable and Reproducible Radiomics Application
IN149-ED-THA4 . . . . **Station #4**

12:45–1:15 PM
Scientific Posters
A Federated Convolutional Denoising Autoencoder for MRI Applications
AI200-SD-THB1 . . . . **Station #1**

A Pilot Study of a New Technique for the 3D Reconstruction of the Incisional Hernia
IN245-SD-THB2 . . . . **Station #2**

A Radiomics Approach for Early Detection of Tumor Response to MDSC-Directed Immunotherapies
IN272-SD-THB3 . . . . **Station #3**

Medical Federated Deep Learning (MedFDL) for Automatic Body Part Labeling of CT Scout Images
AI250-SD-THB2 . . . . **Station #2**

Mimicking Radiologists to Improve the Robustness of Deep-learning Based Automatic Liver Segmentation
IN208-SD-THB1 . . . . **Station #1**

Vulnerability of Deep Learning based Computer-Aided Diagnosis: Experimental Adversarial Attack Against CT Lung Nodule Detection Model
AI202-SD-THB3 . . . . **Station #3**

12:45–1:15 PM

Education Exhibits

Common-Space-Learning from Multi-Modality for Missing MRI Synthesis and Glioma Grading
AI009-EC-THB . . . . **Custom Application Computer Demonstration**

Generative Adversarial Network Models for Prediction of Survival in Patients with Interstitial Lung Diseases
AI002-EC-THB . . . . **Custom Application Computer Demonstration**

Integrated Research Platform for Prostate Cancer
IN034-EC-THB . . . . **Custom Application Computer Demonstration**

Tips and Tricks on Basic Programming Tools for Radiologists to Handle DICOM Data
IN023-EC-THB . . . . **Custom Application Computer Demonstration**

Education Exhibits

Space No.	Exhibit Title
AI001-EC-X	Virtual Reality of Self-Supervised Generative Adversarial Learning in Electronic Cleansing for CT Colonography
AI004-EC-X	A Radiologist's Guide to Deep Learning and Artificial Intelligence: What You Need to Know for the Road Ahead
AI011-EB-X	Metrics for Artificial Intelligence Algorithms
AI013-EB-X	Overview of the Content-Based Image Retrieval (CBIR): Technical Advancement and Challenges in Medical Use
AI014-EB-X	From Images to Analysis, Segmentation, Classification and Radiomics: pyOsirix-Centered Workflow Solutions
AI015-EB-X	Practical Guide for Deployment of AI Solutions in Clinical Environment: How Did We Do It?
AI016-EB-X	How to Lie with Statistics: Things to Keep in Mind While Evaluating a Deep Learning Claim
AI017-EB-X	Building Robust ML Models Using Federated Learning: The Future of AI Deployment
AI018-EB-X	Why One Algorithm May Not Fit All: What Radiologists Need to Know About How Selection Bias May Affect Machine Learning Performance
AI019-ED-X	Practical Approaches to Managing Class Imbalance in Deep Learning on Radiological Data
AI020-EB-X	Generative Adversarial Networks Showcase: Their Mechanisms and Radiological Applications
AI021-EB-X	How to Improve the Quality of Organ Segmentation on CT Images and Where Could It Be Applicable?
AI102-ED-X	Dissecting the Artificial Intelligence Black Box: Why, When, and How
AI103-ED-X	How to Use Data Augmentation to Improve Deep Learning Model Performance
AI106-ED-X	An Intuitive Explanation of Radiomics

AI108-ED-X   Neural Networks in Deep Learning: A Simplified Explanation for Radiologists

AI109-ED-X   A Quick Start to Deep Learning for Radiologists

AI111-ED-X   Convolutional Neural Networks: Fundamental Theory and Guided Implementation for the Radiologist Using Google Collaboratory

AI113-ED-X   Convolutional Neural Networks: Challenges and Solutions

AI114-ED-X   Anatomy of a Deep Learning Project for Breast Cancer Prognosis Prediction: From Collecting Data to Building a Pipeline

AI115-ED-X   Clinical and Machine Learning Statistics: What the Radiologist Needs to Know

AI116-ED-X   Artificial Intelligence in Radiology: An Animated Interactive 'How We Do It' Guide for Radiology Residents

AI118-ED-X   Development of Accuracy Guarantee System using Deep Learning in Radiography

AI119-ED-X   Radiomics in Clinical Trials - The Rationale, Current Practices, and Future Considerations

AI129-ED-X   The Subtle Art of Accurate Natural Language Processing for Radiology Report Mining

IN001-EB-X   Cachexia Beyond Dexa

IN002-EB-X   Analysis on Morphometric Complexity to Radiology and Its Clinical Implication

IN003-EB-X   How to Make a Patient and Surgeon-Specific Surgical Guide by 3D Printing Technology Based on the Medical Image

IN004-EB-X   Design of Benchtop Clinical Trials Using Patient Specific 3D Printed Vascular Phantoms

IN011-EB-X   Primer of 3D Printers and Segmentation Software Used in Anatomic Modeling

IN012-EB-X   Quality Assurance Program in 3D Printing: Assuring Accuracy and Understanding Limits of Model Creation

IN014-EB-X   The Role of Advanced 3D Reconstruction as a Tool for Anatomic Model Visualization and Surgical Planning

IN020-EC-X   Real-Time, Fused Holographic Guidance and Navigation Platform for Performing Percutaneous Interventional Procedures

IN021-EC-X   Technique for Improving Accuracy of Deep Learning-based Multi-Organ Segmentation from CT Volumes

IN022-EC-X   3D Slicer: A Community-Based Open Source Platform for Processing and 3D Visualization of DICOM Images

IN024-EC-X   Interactive Web-Based Imaging Response Assessment Training Application for Cancer Clinical Trials

IN100-ED-X   Teaching the Spectrum of Disease with a Newly Design Web Application: Fluid Status on Chest X-Rays

IN101-ED-X   Patient Dose Calculation and Counseling using Open Source Mobile App

IN104-ED-X   CT Texture Analysis with Ultra-High-Resolution CT Imaging Improve the Confidence on Quantitative Assessment of Lesion Heterogeneity

IN105-ED-X   Radiomic, Dual-Energy CT, and Machine Learning: A Holy Troika for Focal and Diffuse Abnormalities on CT

IN107-ED-X   Moving from Burnout to Wellness: A Review of Burnout in Radiology and Strategies for Mitigation

IN110-ED-X   Establishing a Registry for Medical 3D Printing

IN112-ED-X   Important Factors in Building Structured Reporting Template for Pancreatic Cystic Neoplasms

IN117-ED-X   Detection of Meniscal Degeneration for Osteoarthritis in Ultrasonography

IN120-ED-X   3D Printed Patient-Specific Surgical Cutting Guides Based on CT-Derived Anatomic Meshes

IN121-ED-X   3D Printing in Medicine: A Primer for Radiologists

IN122-ED-X   Several Shades of Gray: A Practical Approach to Workstation Monitor Selection

IN123-ED-X   Volume Matching: Using the Best Parts of the Tool Box

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