# Artificial Intelligence and Machine Learning in Cardiovascular CT Meeting

**April 24 - 26, 2020 | New York, New York**

## PROGRAM

### FRIDAY, APRIL 24

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Talk</th>
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<tbody>
<tr>
<td>12:00pm - 1:00pm</td>
<td>Registration</td>
<td>Welcome</td>
</tr>
<tr>
<td>1:00pm - 3:00pm</td>
<td>Machine Learning/AI basics principles</td>
<td>Koen Nieman, MD, PhD, Ed Nicol, MD, MBA, FSCCT and Michelle Williams</td>
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<tr>
<td>1:05-1:10pm</td>
<td>Welcome from SCCT President</td>
<td>Ron Blankstein, MD, MSCCT</td>
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<tr>
<td>1:10-1:35pm</td>
<td>The big picture - why are we talking about</td>
<td>James Min, MD, MSCCT</td>
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<tr>
<td>1:35-2.00pm</td>
<td>machine learning/AI</td>
<td>Puneet Sharma</td>
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<tr>
<td>2:00-2:25pm</td>
<td>Basic principles - deep learning, convolutional neural networks</td>
<td>Bruno DeMan</td>
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<tr>
<td>2:25-2:50pm</td>
<td>Basic principles - texture analysis, radiomics, feature selection</td>
<td>Daniel Rubin, MD, MS</td>
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<tr>
<td>2:50-3:00pm</td>
<td>Discussion</td>
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<tr>
<td>3:30pm - 3:30pm</td>
<td>Break</td>
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<tr>
<td>3:30pm - 5:45pm</td>
<td>Experiences of Machine Learning/AI in cardiac computed tomography</td>
<td>Big data and coronary artery disease</td>
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<tr>
<td>3:30-3:50pm</td>
<td>Imaging coronary artery disease</td>
<td>Ken Mahaffey</td>
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<td>3:50-4:10pm</td>
<td>Radiomics and coronary artery disease</td>
<td>Damini Dey, PhD, FSCCT</td>
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<td>4:10-4:30pm</td>
<td>Predicting outcomes from images</td>
<td>Leo Grady</td>
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<td>4:30-4:50pm</td>
<td>Machine learning in computational fluid dynamics</td>
<td>Charley Taylor, PhD</td>
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<td>4:50-5:10pm</td>
<td>Amazon's view of AI/ML in healthcare</td>
<td>Maulik Majmudar, MD</td>
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### SATURDAY, APRIL 25

<table>
<thead>
<tr>
<th>Time</th>
<th>Machine Learning Workshop - Big Data (Breakout 1)</th>
<th>Machine Learning Workshop - Image Analysis/Radiomics (Breakout 2)</th>
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</thead>
<tbody>
<tr>
<td>8:00am - 10:00am</td>
<td>Software/Hardware requirements</td>
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<tr>
<td>8:00-8:20am</td>
<td>Big data example</td>
<td>Image analysis/radiomics example</td>
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<td>8:20-10:00am</td>
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<tr>
<td>10:00am - 10:45am</td>
<td>Break/Networking</td>
<td></td>
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<tr>
<td>10:30am - 12:30pm</td>
<td>Machine Learning Workshop - Big Data (Breakout 3)</td>
<td>Machine Learning Workshop - Image Analysis/Radiomics (Breakout 4)</td>
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<tr>
<td>10:30-10:50am</td>
<td>Software/Hardware requirements</td>
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<tr>
<td>10:50-12:30pm</td>
<td>Big data example</td>
<td>Image analysis/radiomics example</td>
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<tr>
<td>12:30pm - 1:30pm</td>
<td>Lunch/Networking</td>
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**Saturday, April 25 Continued**

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<thead>
<tr>
<th>TIME</th>
<th>SESSION</th>
<th>TALK</th>
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</table>
| 1:30pm - 3:00pm | Rapid fire - Practical and ethical challenges and Machine Learning/AI solutions | 1:30-1:45pm  
1:45-2:00pm  
2:00-2:15pm  
2:15-2:30pm  
2:30-2:45pm  
2:45-3:00pm  |
| 3:00pm - 3:30pm | Break/Networking                                             | 3:30-3:50pm  
Beyond the hype - limitations of Machine Learning/AI  
Leslee Shaw, PhD, MSCCT  
3:50-4:10pm  
Overfitting and bias in machine learning  
Michelle Williams, MD, PhD, FSCCT  
4:10-4:30pm  
Finding data and making it useable  
Michael Lu  
4:30-4:50pm  
Write and Review a machine learning paper  
Charles Kahn, MD  
4:50-5:10pm  
What are the ethical issues and who is responsible when things go wrong?  
Saurabh Jha, MD  
5:10-5:30pm  
Discussion |
| 3:30pm - 5:30pm | Challenges in Machine Learning and AI                     | 3:30-3:50pm  
Beyond the hype - limitations of Machine Learning/AI  
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3:50-4:10pm  
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| 8:30am - 10:00am | Practicalities of implementation                           | 8:30-8:50am  
How to fund a good ML/AI idea  
8:50-9:10am  
Implementing machine learning solutions in local research  
Partho Sengupta  
9:10-9:30am  
Integrating third-party commercial AI solutions into healthcare  
9:30-9:50am  
Using ML/AI to advance image interpretation  
Jeff Sorenson  
9:50-10:00am  
Discussion |
| 10:00am - 10:30am | Break/Networking                                             | 10:30-10:50am  
AI and precision medicine - hype or hope?  
Michael McConnell, MD  
10:50-11:10am  
Clinical decision support by multiparametric data integration (including radiogenetics)  
Rajesh Dash, PhD  
11:10-11:30am  
Vital - A Model for Trials of the Future  
Leslee Shaw, PhD, MSCCT  
11:30-11:50am  
AI and advanced analytics in computed tomography  
Anders Persen, MD, PhD  
11:50-12:10pm  
Public health and prevention - the clinical need of the future?  
12:10 -12:15pm  
Discussion |
| 10:30am - 12:20pm | Machine learning/AI and the future                           | 10:30-10:50am  
AI and precision medicine - hype or hope?  
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12:15pm -12:30pm  Meeting close