

ACVR/ECVDI Educational Resources for Artificial Intelligence April 2021

Diagnostic Imaging :

Educational Platforms:

American College of Radiology AI Lab:

<https://ailab.acr.org/Learn/Index>

Radiological Society of North America:

<https://www.rsna.org/en/education/ai-resources-and-training>

CTisus:

<https://www.ctisus.com/responsive/deep-learning/default.asp>

Videos:

Keynote Address ACVR 2017, Dr. Eliot Siegel: <https://vimeo.com/240727510/b9aedb146d>

Articles :

General:

Hosny A, Parmar C, Quackenbush J, Schwartz LH, Aerts HJWL
Artificial intelligence in radiology. *Nat Rev Cancer* 2018 Aug;18(8):500-510. doi:
10.1038/s41568-018-0016-5 (Open Access)

El Naqa I, Das S The role of machine and deep learning in modern medical physics. *Med Phys*
2020 Jun;47(5):e125-e126. doi: 10.1002/mp.14088

Tang A, Tam R, Cadrin-Chênevert A et al.
Canadian Association of Radiologists White Paper on Artificial Intelligence in Radiology.
Canadian Association of Radiologists (CAR) Artificial Intelligence Working Group *Can Assoc
Radiol J* 2018 May;69(2):120-135. doi: 10.1016/j.carj.2018.02.002 (Open Access)

Ethics:

Brady AP, Neri E Artificial Intelligence in Radiology-Ethical Considerations *Diagnostics (Basel)*
2020 Apr 17;10(4):231 doi: 10.3390/diagnostics10040231 (Open Access)

Jaremko JL, Azar M, Bromwich R et al. Canadian Association of Radiologists White Paper on
Ethical and Legal Issues Related to Artificial Intelligence in Radiology. Canadian Association of
Radiologists (CAR) Artificial Intelligence Working Group. *Can Assoc Radiol J* 2019
May;70(2):107-118. doi: 10.1016/j.carj.2019.03.001 (Open Access)

Research Guidelines:

Bluemke DA, Moy L, Bredella MA et al. Assessing Radiology Research on Artificial Intelligence: A Brief Guide for Authors, Reviewers, and Readers-From the *Radiology* Editorial Board *Radiology* 2020 Mar;294(3):487-489 doi: 10.1148/radiol.2019192515 (Open Access)

Gregory J, Welliver S, Chong J
Top 10 Reviewer Critiques of Radiology Artificial Intelligence (AI) Articles: Qualitative Thematic Analysis of Reviewer Critiques of Machine Learning/Deep Learning Manuscripts Submitted to JMRI. *J Magn Reson Imaging*. 2020 Jul;52(1):248-254. doi: 10.1002/jmri.27035.

FDA Guidelines :

Artificial Intelligence/Machine Learning (AI/ML)-Based Software as a Medical Device (SaMD) Action Plan January 2021 : <https://www.fda.gov/media/145022/download>

Proposed Regulatory Framework for Modifications to Artificial Intelligence/Machine Learning-Based Software as a Medical Device. April 2019 : <https://www.fda.gov/media/122535/download>

Clinical Performance Assessment: Considerations for Computer-Assisted Detection Devices Applied to Radiology Images and Radiology Device Data in Premarket Notification (510(k)) January 2020 : <https://www.fda.gov/media/77642/download>

Radiation Oncology :

Articles:

Jarrett D, Stride E, Vallis K, Gooding MJ
Applications and limitations of machine learning in radiation oncology. *Br J Radiol* 2019 Aug;92(1100):20190001. doi: 10.1259/bjr.20190001 (Open Access)

Rattan R, Kataria T, Banerjee S, Goyal S, Gupta D, Pandita A, et al. Artificial intelligence in oncology, its scope and future prospects with specific reference to radiation oncology. *BJR Open* 2019; 1: 20180031 doi : org/ 10. 1259/ bjr. 20180031(Open Access)

Thompson RF, Valdes G, Fuller CD Artificial intelligence in radiation oncology: A specialty-wide disruptive transformation? *Radiotherapy and Oncology* 129 (2018) 421–426
doi: 10.1016/j.radonc.2018.05.030

Wang C, Zhu X, Hong JC, Zheng D
Artificial Intelligence in Radiotherapy Treatment Planning: Present and Future. *Technol Cancer Res Treat* 2019 Jan 1;18: doi: 10.1177/1533033819873922.