

AI RESOURCES FOR RESIDENTS IN RADIOLOGY

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General AI - Introduction

MicroSoft Learn - <https://docs.microsoft.com/en-us/learn/> - They have courses for all levels, many of them interactive through Jupyter notebooks.

Deep Learning, LeCun & Hinton, Nature 2015

<https://www.nature.com/articles/nature14539>

<https://softwareengineeringdaily.com/2017/05/10/convolutional-neural-networks-with-matt-zeiler/> (podcast): convolutional neural networks and image recognition explained

The Topol review: <https://topol.hee.nhs.uk/wp-content/uploads/HEE-Topol-Review-2019.pdf> - hallmark report about preparation of the healthcare workforce to deliver the digital future

Radiology AI – Introduction

https://pubs.rsna.org/page/ai/magicians_corner

Machine Learning for Medical Imaging. RadioGraphics 2017.

<https://doi.org/10.1148/rq.2017160130>

Deep Learning: A primer for Radiologists. RadioGraphics 2017

(<https://pubs.rsna.org/doi/full/10.1148/rq.2017170077>)

<https://www.acrdsi.org/Resources>

UCSF – The future of Machine Learning in Clinical Imaging – Kohli, Taylor and Mongan

<https://www.youtube.com/watch?v=DSg9DqMW1-8&t=1236s>

AI in radiology at Stanford: Rise of the machines – Dr. M.P. Lungren -

<https://www.youtube.com/watch?v=Gigd1rkZTSE>

Ethics of AI in Radiology: Summary of the Joint European and North American Multisociety Statement (<https://doi.org/10.1148/radiol.2019191586>) (also available as podcast through SIIMcast): a must-read/listen

Machine learning in cardiovascular magnetic resonance: basic concepts and applications

<https://jcmr-online.biomedcentral.com/articles/10.1186/s12968-019-0575-y>

Assessing Radiology Research on AI: a brief guide for authors, reviewers and readers –

Bleumke <https://doi.org/10.1148/radiol.2019192515>

ACR RFS Artificial Intelligence Journal Club ([https://www.acr.org/Member-](https://www.acr.org/Member-Resources/rfs/Journal-Club)

[Resources/rfs/Journal-Club](https://www.acr.org/Member-Resources/rfs/Journal-Club) and

<https://www.youtube.com/playlist?list=PLsh1jAUzVC48XbH-YuUz4f-oYfV6mKBQ4>)

ACR AI-Lab (<https://ailab.acr.org>)

EuSoMII webinar series - <https://www.youtube.com/channel/UCUAJVPk-Hkbw0wM-f3CiQuA>

SIIMcast (podcasts) <https://siim.org/page/siimcast>

EuSoMII on air (podcasts) - <https://anchor.fm/eusomii> (also on spotify)

In-depth training

National Imaging Informatics Curriculum and Course

(<https://sites.google.com/view/imaging-informatics-course/home>)

Coursera:

- Improving your statistical Inferences (intermediate), TU/e
- Reinforcement Learning (intermediate) – University of Alberta
- Machine Learning (mixed levels) – Stanford University (Andrew Ng)
- Ai for everyone (beginner) – Deeplearning.ai
- Deep Learning Specialization (intermediate)– Deeplearning.ai

EdX:

- Computer Science for Artificial Intelligence – Harvard University

Book

Artificial Intelligence in Medical Imaging by Ranschaert, Morozov and Algra

https://link.springer.com/book/10.1007%2F978-3-319-94878-2?fbclid=IwAR2LzjUeRKsIF2iKgyHBIN9wghrRuUj-t749Aa2ds-3XQB5eb-t_mN5tjVU

(Currently downloadable for free)

Blogs

ESR AI blog

<https://ai.myesr.org/>

Charles E. Kahn's The Vasty Deep blog

https://pubs.rsna.org/page/ai/blog/2019/01/a_mystery_revealed