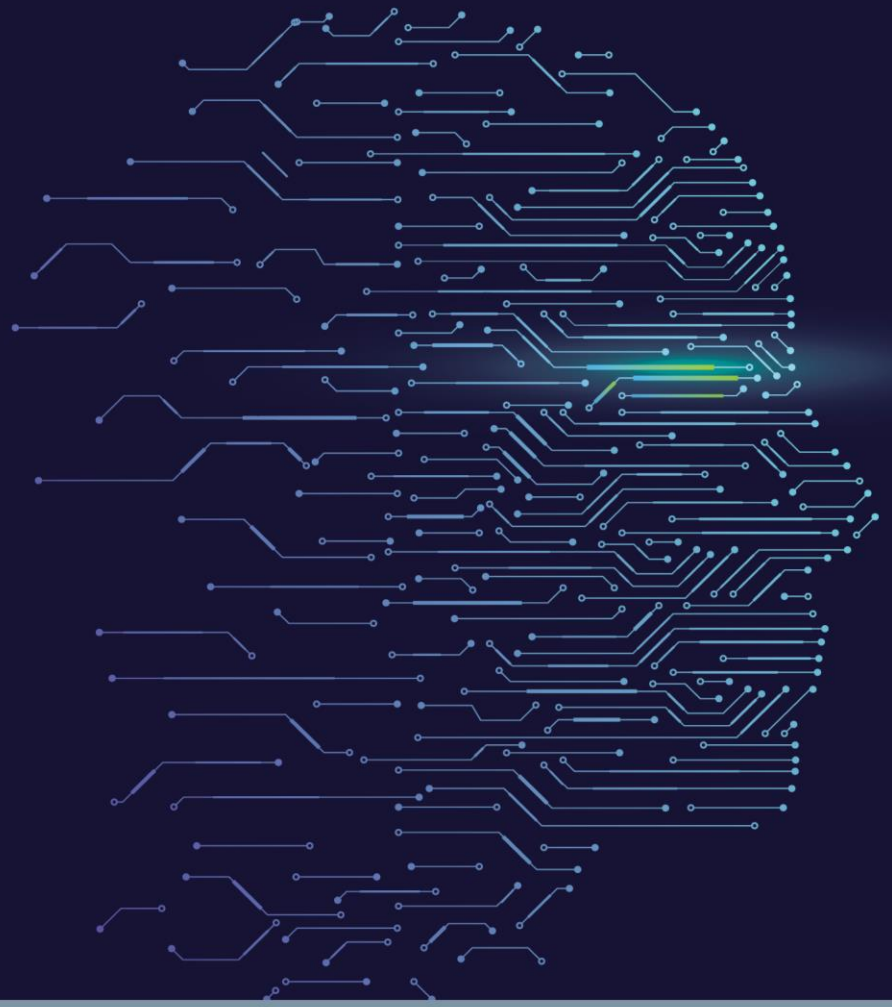
2019 IMAGING INFORMATICS SUMMIT



AI in clinical practice
A leaders (=Beginner's) Perspective

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Disclosures

- Occasional medical advisory activity on behalf of Philips

Learning Objectives

- Practicing Radiologist's perspective on early AI implementations in practice
- Chairman's / Administrator's perspective on current implementation process AI in practice
- How to think about the challenges surrounding current, early AI implementation
- WHY? HOW TO? HOW MUCH? WHAT ELSE?

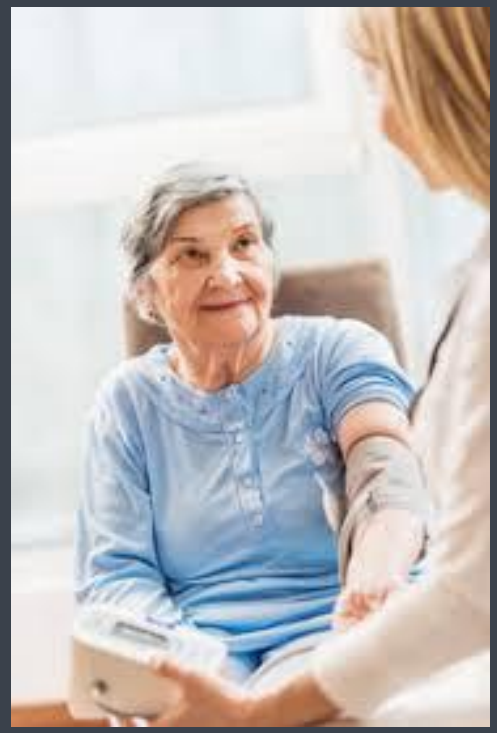
WHY [bother]?

3.4 Reasons to think about getting in the game…

- Logical extension of digitization of imaging (PACS/Storage/Viewing – Advanced image processing – AI)

- What if…AI is in fact the next most transformative technology in Radiology
- What if…is was better than radiologists at some things we do
- What if…it was more “available” than radiologists to do certain things
- What if…you struggle today to “keep up” during certain times of the 24/7/365 “radiology year”?
- What if…you could learn today what it takes to implement AI *before* it becomes mainstream
- What if…you needed to know whether your tech stack is AI ready
- What if…there aren’t enough Rads to take care of the Boomers?
- What if…there aren’t ANY Rads in other parts of the world to take care of patients?

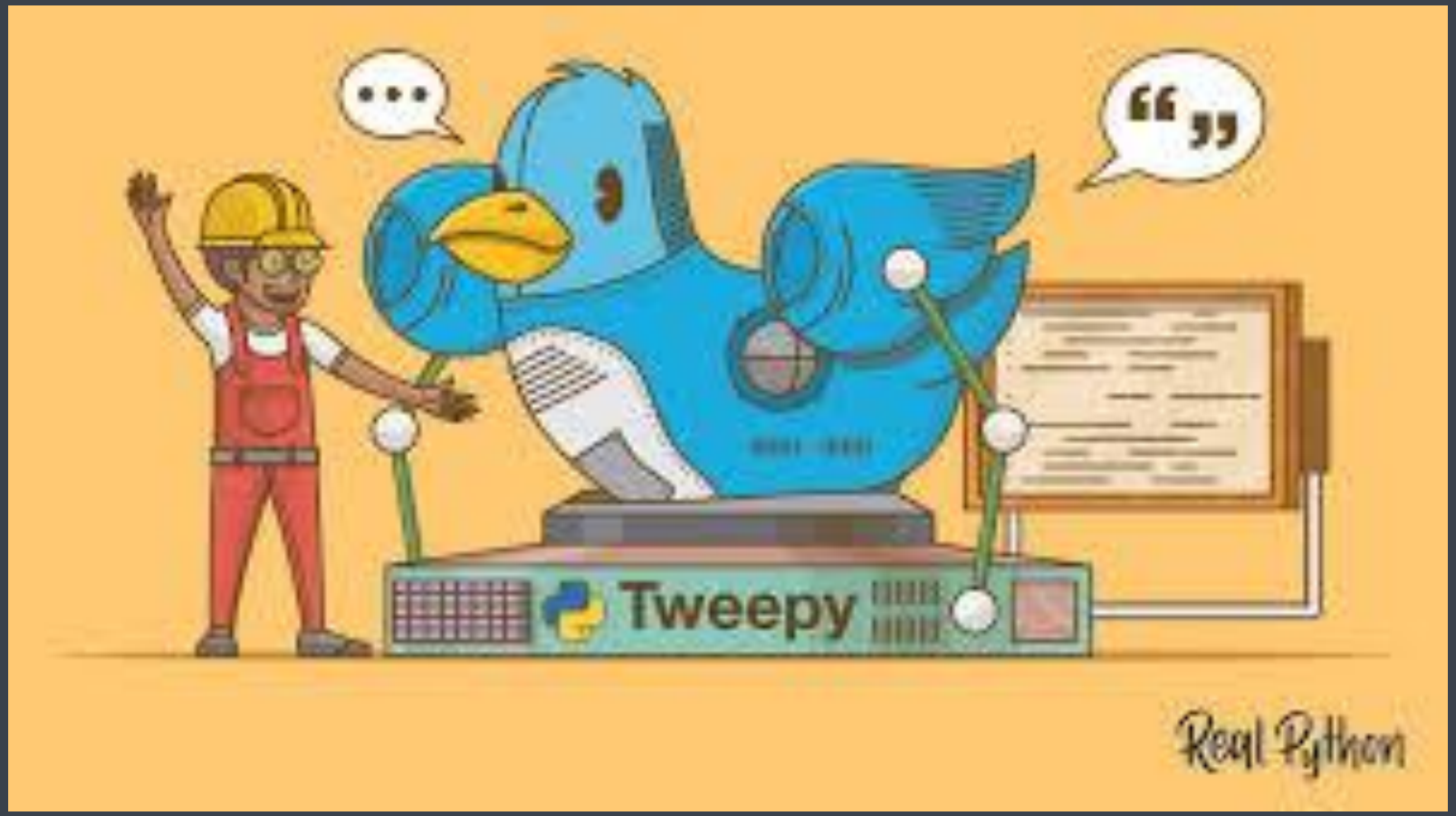
And what about patients?



- Patients [*currently*] prefer humans over AI
- Patients are unsure how AI is implemented in Radiology
- Patients do think that AI could reduce interpretation times and lower costs
- Patients fear that AI reduces interaction with providers
- Patients are not comfortable with AI responsible for their healthcare

A Qualitative Study to Understand Patient Perspective on the Use of Artificial Intelligence in Radiology
Haan, Marieke et al. https://doi.org/10.1016/j.jacr.2018.12.043

How?



How to…?

- **TECHNICAL**
- (1) On Premise – (2) Cloud based
- (2) easier to get approved, scaling issue!!
- (3) may not be an option (local IT security culture), TAT matters (ED cases etc)
- Routing to multiple destinations, large scale image retrieval from PACS
- Where does the DATA live or go? On Prem/VPC/Remote?
- **WORKFLOW**
- AI needs to be incorporated into clinical workflow (work priorisation, interpretive result, scanner)
- Needs to be shown in prod viewer, structured output into reporting app preferred, integration with report generation, EHR, etc
- How do you vet, localize, and “approve” algorithms for local use?

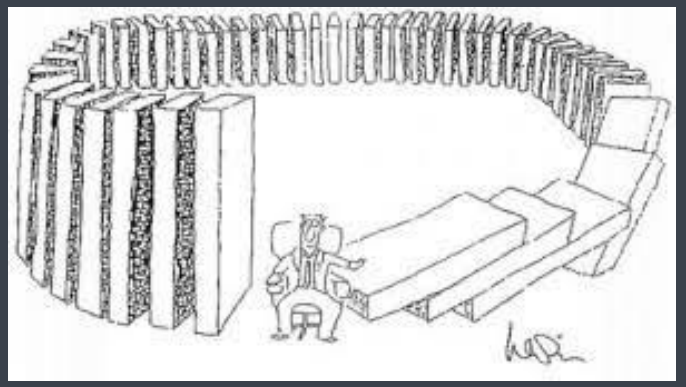
How much?

$$$ makes the world go around…

- How much do YOU get paid for the use of AI?…”0”
- How much do you pay for the use of AI?
- What problem(s) are you solving with AI and what is that worth to you?
- Should AI be paid out of professional or technical revenue? *It depends*.
- Should payers re-value our work once AI becomes mainstream?
- If that happens, how do you distinguish between work done by humans, done by machine, or combination?
- What happens if you still do things the “old way”, for very good reasons…

What else?

The law of unintended consequences…



- **What if**…all normal radiology exams were taken "off the table" by AI? Top of license? Work intensity?
- **What if**…our rad groups would have to individually assess each AI in each practice –Necessary for safe implementation? Unpaid activity? Bandwidth of staff?
- **What if**…Ai was great at solving challenging cases but occasionally failed at simple stuff we no longer double-check…who is liable? *Rad? Manufacturer? Hospital? All of the above!*


MARCH 28
NOT
READY FOR
PRIMETIME
BY ERIK J. RODRIGUEZ & CHARLES A. SUTHERS