



WHAT IS A.I.?

Artificial intelligence (AI) is a term to describe a branch of computer science that is dedicated to creating intelligent machines that would learn to work and react like humans. The field of Artificial Intelligence is not limited to creating only high levels of [machine learning](#), but also to utilize data input in a manner required to produce a needed result





What is 5G ?

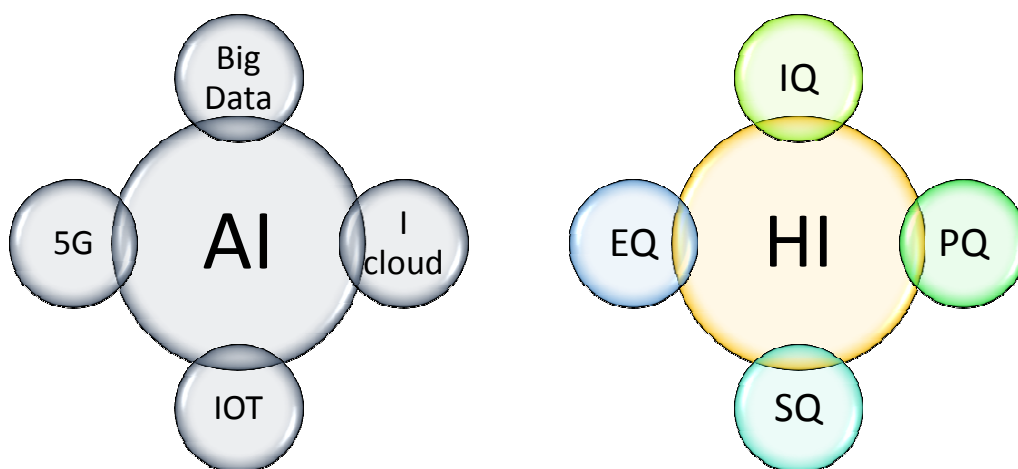
- 5 Gigabits ?
- 5 Generation ?
- 5 Gravity ?
- 5 Giga-Hz ?



What is 5G ?

- The G in this 5G means it's a generation of wireless technology. While most generations have technically been defined by their data transmission speeds, that make it incompatible with the previous generation.
- 5G brings three new aspects to the table: bigger channels (to speed up data), lower latency (to be more responsive), and the ability to connect a lot more devices at once (for sensors and smart devices).

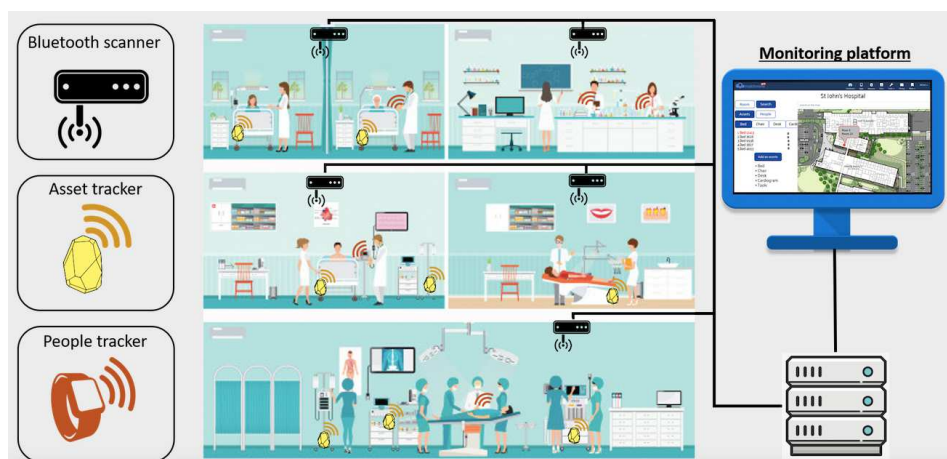
AI vs HI

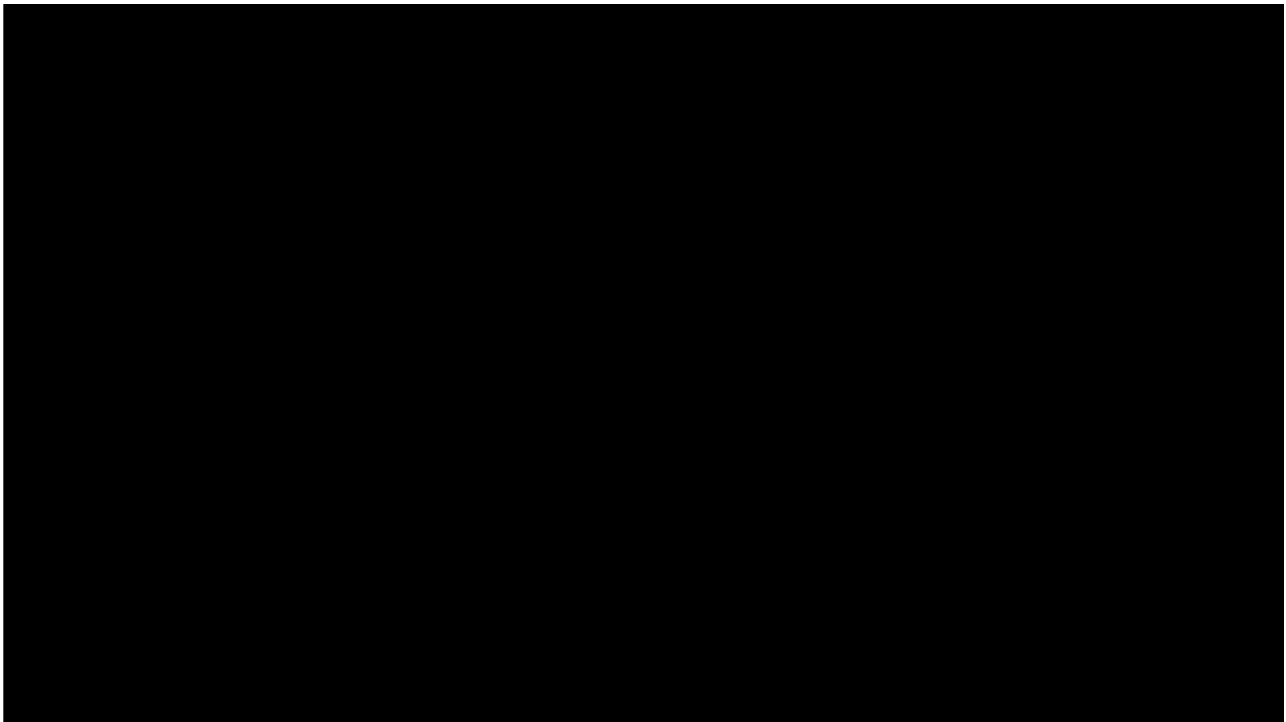


The Key element
to make AI works
is



Do AI, IoT, Big Data , i-cloud and 5 G make
hospital smarter ?





ALARA

- A: As
- L: Low
- A: As
- R: Reasonably
- A: Achievable

- A: Artificial
- L: Learning
- A: Achievement
- R: Radiation
- A: Assurance

AI can help

- AI could have knock-on impacts on radiation protection by reducing the incidence of unnecessary procedures, reducing the doses administered, increasing the image quality, and improving patient safety in general.



AI can help

- There are several papers that examine where dosing has been reduced by at least 50% in CT scans.
- If you consider digital breast tomosynthesis imaging cases, you could reduce the dose by as much as 70%.
- AI will help to reduce the dose and can help deal with the difficulty of dose exposure, but also help to reduce the dose of contrast agent, which is extremely important.

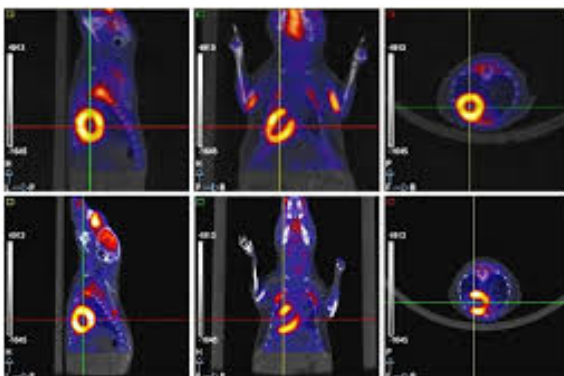


AI can help

- AI will be a method of demonstrating the clinical value of radiology and will allow for faster and more accurate image assessment and hence diagnosis with prediction.



AI can help



- For example, heart radiologists assisting in developing a new sequence - and we see a very wide variation between each of them. This variability is a non-quality factor, and by using AI, you smooth this variation out. Then, you'll have no variation as the AI system response is always the same, and this is a very important aspect.

AI can help

- One other important aspect is the radiology workflow and instant dose receiving. The workflow is like working in a kind of cockpit. You are not always aware of what is happening in the working room and radiation exposure; in particular, you are not aware of emergencies. It is extremely important to have a system which connects with the emergency and which puts this emergency on top of a working list for the radiologists.



and (source: Photography 1st)

Radiation Detection Revolution

- Sensitivity , response, 靈敏性, 定量分析,
EX. GM vs YSO
- Specificity, accuracy , 特異性 , 定性分析,
Ex. PM vs SiPM



eDOSIMETER

What the look of eDOSIMETER is the best solution to quickly detect the unknown radiation from patient, radio-pharmacy or source for alarming you any further contact.

- MD, PhD, SP Chang Lai



Area monitor

- * 0.01 µGy/h~99mGy/h
- * 41 cps/µSv/h
- * 20 keV~3MeV
- * φ175mmx50mm





Wall Mounted



Stand Alone



Personal Protector



Pocket Alarm Detector

- * 0.01µSv/h~100mSv/h
- * 0.01µSv~10Sv
- * 30 keV~3MeV
- * 60x46x20mm



Powerful working station: unlimited connection, data management, dose analysis and mapping, training record and GPS (there are more than your expectation).



Electronic Personal Dosimeter

- * 0.01µSv/h~10mSv/h
- * 0.01µSv~100Sv
- * 20 keV~3MeV
- * ≤ 2sec response
- * 69x46x17mm



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<http://www.bqsv.com>



Personal Badge Revolution

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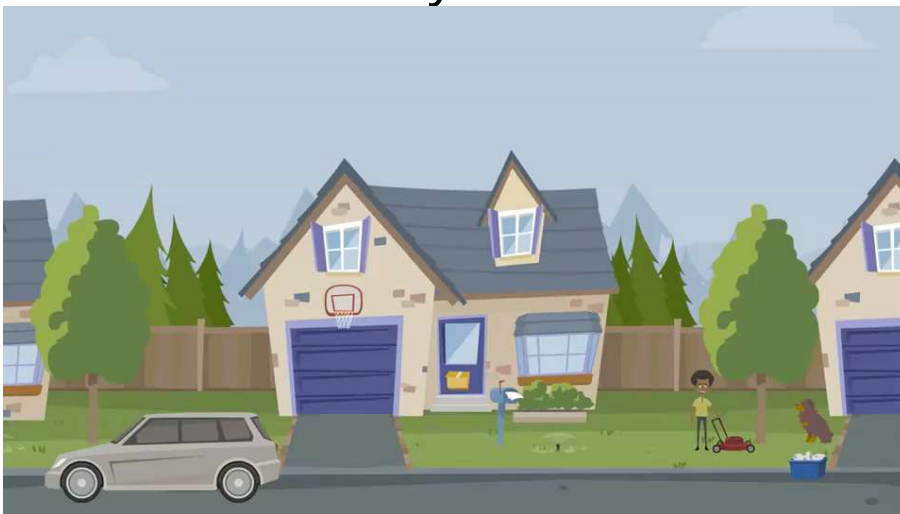
Personal Badge Revolution Instadose



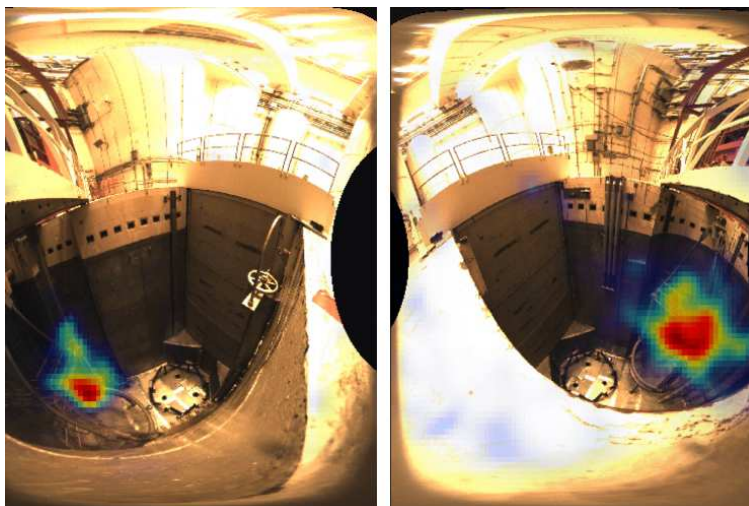
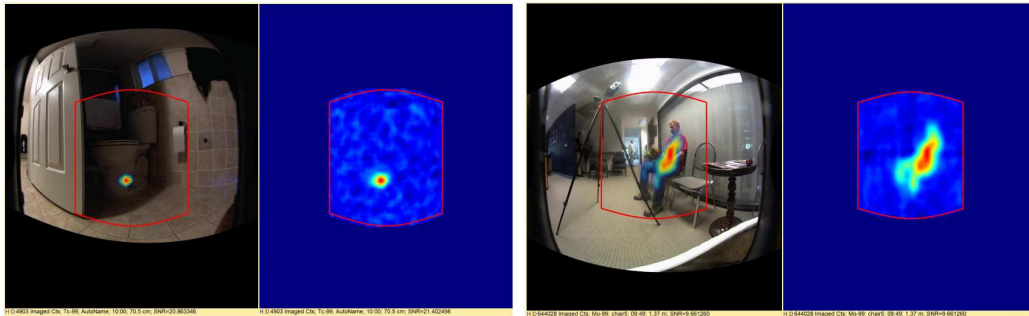
What if IPS + RMS

- Patient position and tracing
- avoid exposure from NM patient
- Reduce worker and patient dose
- improve the exams schedule
- Social distancing
- Estimate patient internal dose
- Equipment location
- Emergency alarm
- More...

Indoor Position System



If Radiation is visible



If
Radiation
is visible

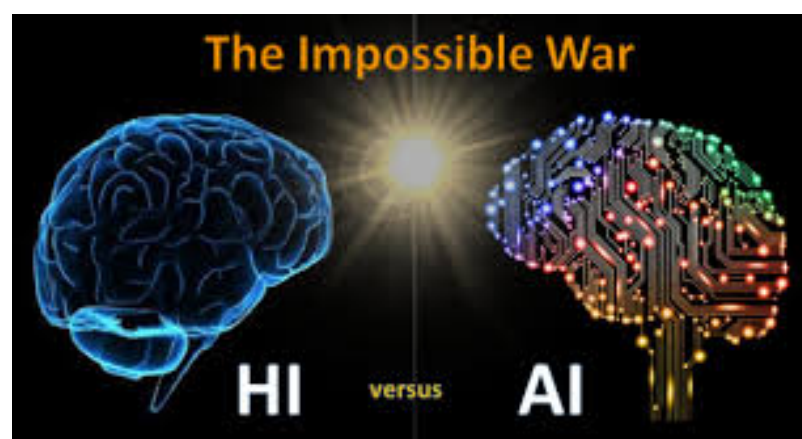
Smart Robot for Isolation ward



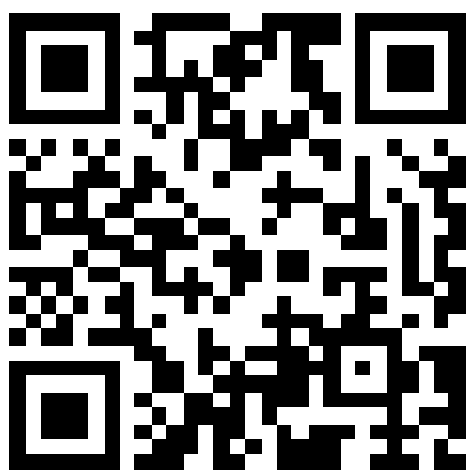


SMART Hospital

- S: Service, software, SOP
- M: Man and management
- A: Architecture, building, layout, infrastructure
- R; Recycle, Reuse, Reduce for environment friendly
- T; Technology, medical device and facility, IOT...



Smart Hospital makes life better
Better life makes us smarter



您的意見是我們
進步的動力

問卷調查QR
Code