智慧X光攝影系統
Intelligent X-ray Imaging System

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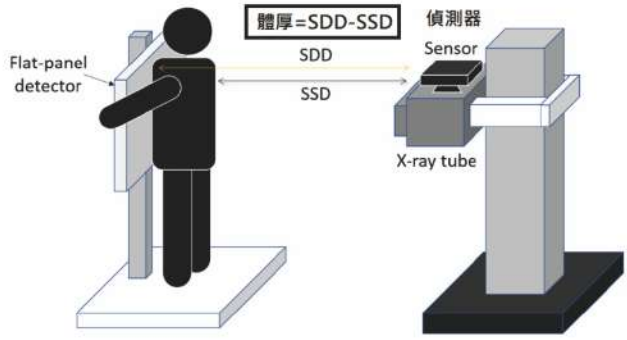
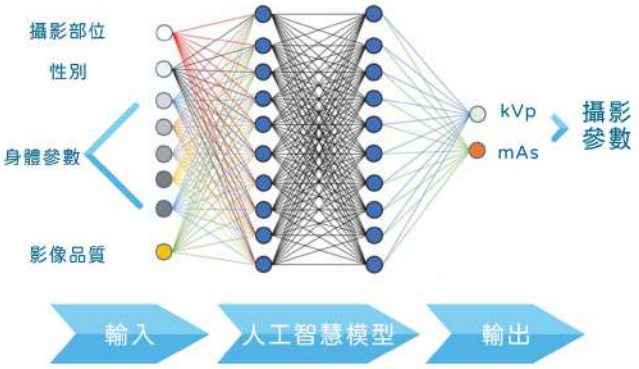
技術簡介 Technology Overview

傳統X光攝影需要透過有經驗的放射師來調整出最佳攝影參數，該攝影參數能使受檢者在接受最少的輻射劑量下獲得足夠的影像診斷品質，並且避免受檢者吸收過多的輻射劑量造成致癌風險增加。然而我們團隊研究發現，雖然現今的X光攝影系統使用自動暴露控制技術，當受檢者擺位不佳或體內有植入物者，使得自動暴露控制偵測錯誤，造成受檢者可能增加約20%的輻射劑量與致癌風險。為了獲得最佳的攝影參數，本團隊開發出人工智慧X光攝影系統，該X光攝影系統搭配了非接觸體厚測量設備，除了準確測量身體厚度外，透過輸入受檢者的身高與體重，內建的智慧型X光攝影系統可輸出最佳的暴露參數，藉此獲得穩定的X光影像品質，降低不必要的輻射致癌風險。

Traditional X-ray imaging requires experienced radiographers to adjust the optimal imaging parameters. These parameters allow the examinee to obtain sufficient image diagnostic quality with the least radiation dose, while avoiding excessive radiation absorption and increased risk of cancer. However, our research team has found that although current X-ray imaging systems use automatic exposure control technology, incorrect detection can occur when the examinee is in a poor position or has internal metallic objects, resulting in an approximately 20% increase in radiation dose and cancer risk for the examinee. In order to obtain the best imaging parameters, our team has developed an artificial intelligence X-ray imaging system. This X-ray imaging system is equipped with a non-contact body thickness measurement device, which accurately measures body thickness. By inputting the examinee's height and weight, the built-in intelligent X-ray imaging system can output the optimal exposure parameters, thereby obtaining stable X-ray image quality and reducing unnecessary radiation-induced cancer risk.



智慧X光攝影系統-非接觸體厚測量
Smart X-Ray – Non-Contact Body Thickness



智慧X光攝影系統-智慧X光攝影參數模型
Smart X-Ray – Imaging Parameter Model

相關專利 Patents

TW I825328、TW I782737