

ML3CM0 林承冠 Perry Lin 2021/3/12

### **Outline**

### I. 專案介紹

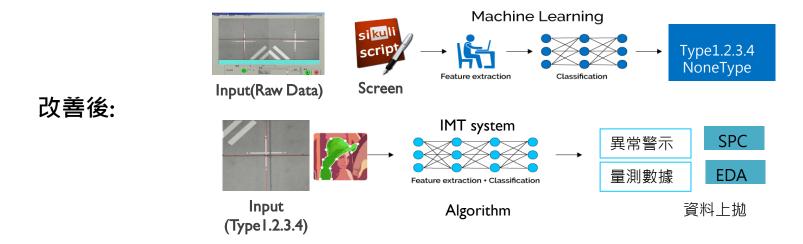
- I. 背景目的
- 2. 定義問題
- 3. 製程流程說明

### 2. 專案執行過程

- I. 資料蒐集
- 2. 資料前處理







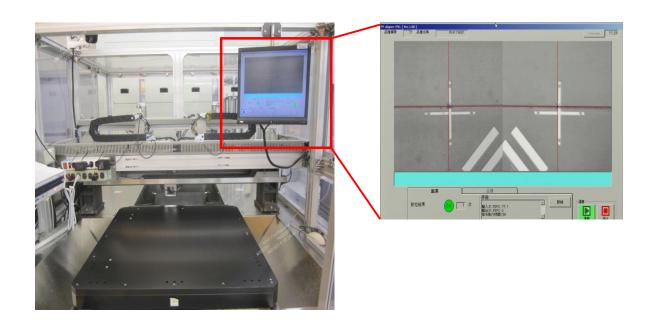


### 分析

□ 流程痛點: 抽樣檢測,且人工量測且紙本填寫耗時,可能有量測、填寫錯誤

□ 改善目標:透過影像辨識的方式自動測量精度,可片片檢測異常

□ 資料來源:收集X-ray Cutting影像,擷取攝影機訊號取出切割Data





分析

□ 改善人工: (移動站點+量測24個點+填表+Keyin資料上拋) x 抽檢次數 x 生產頻率

#### 移動站點



抽檢量測24個點+填表



抽檢次數 (3/8共5次) (3/9共7次)

Keyin資料上拋

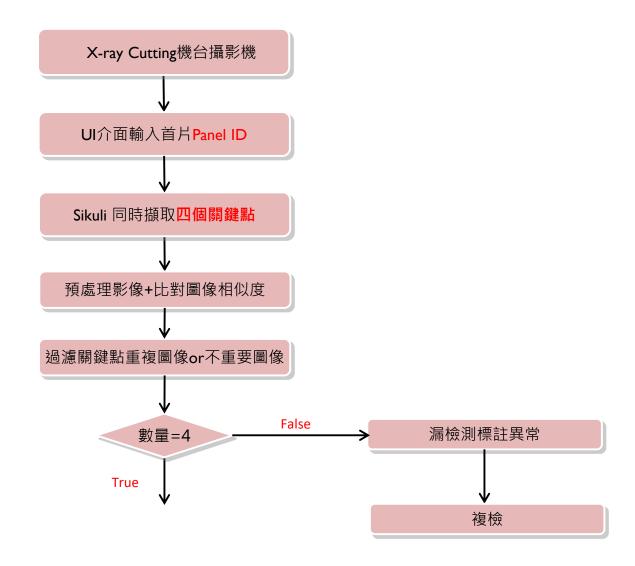


人工填表、人工keyin

### X-Ray Cutting 精度量測作業流程



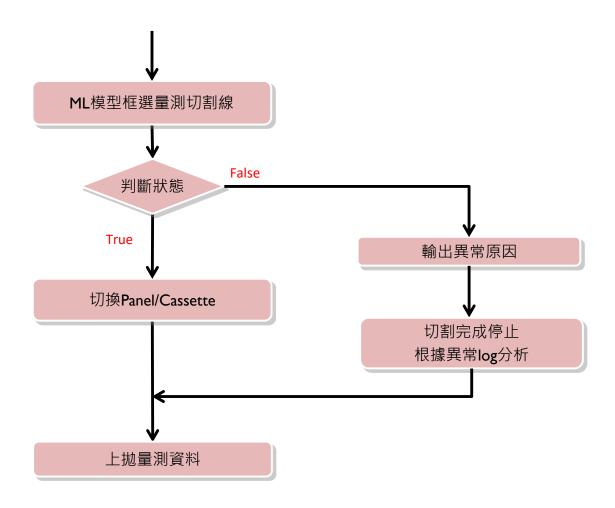




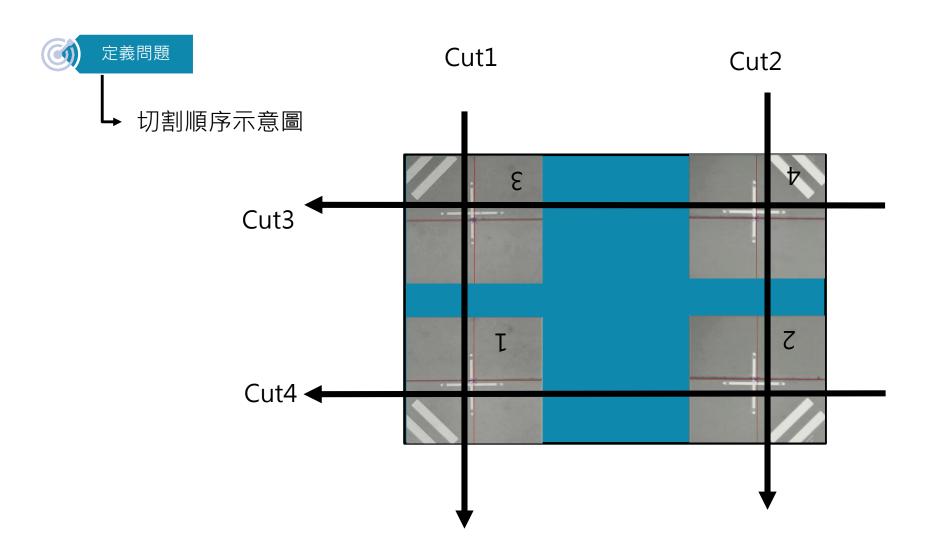
### X-Ray Cutting 精度量測作業流程



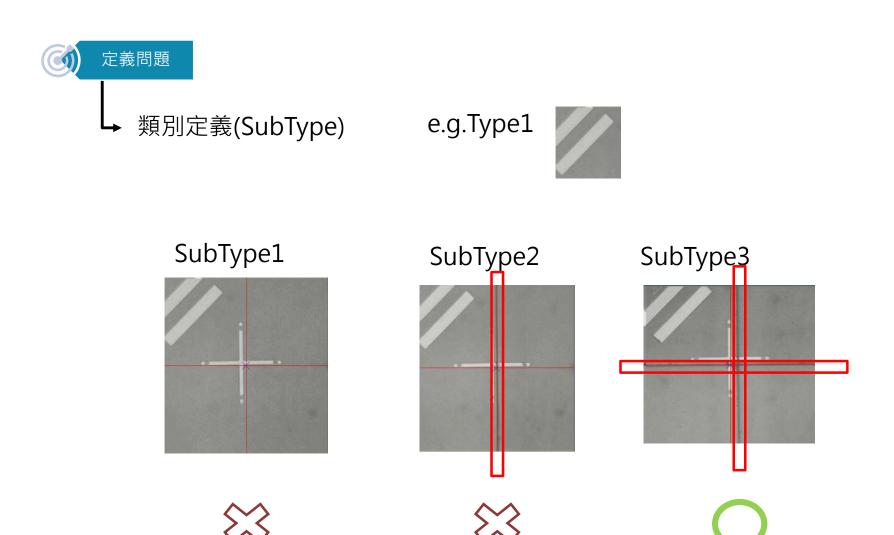








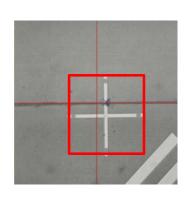


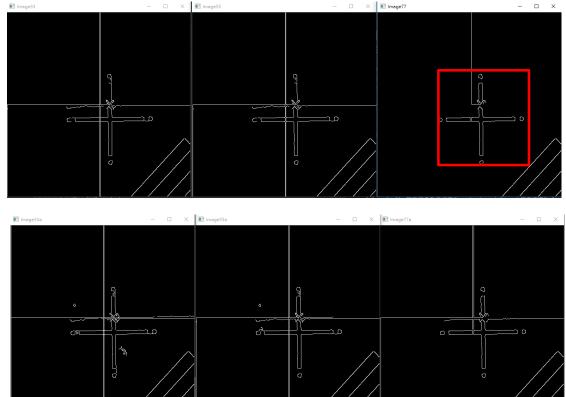






特徵顯現(去除紅線取特徵)



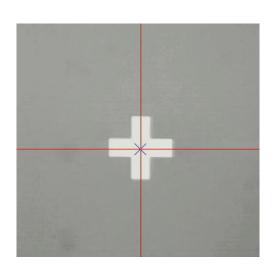


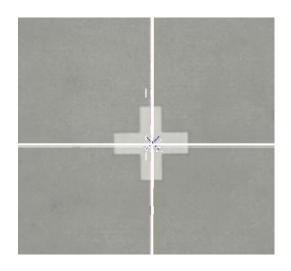




#### 資料蒐集

特徵顯現(去除紅線取特徵)





# How to modify 紅線影響





特徵顯現(去除紅線取特徵)

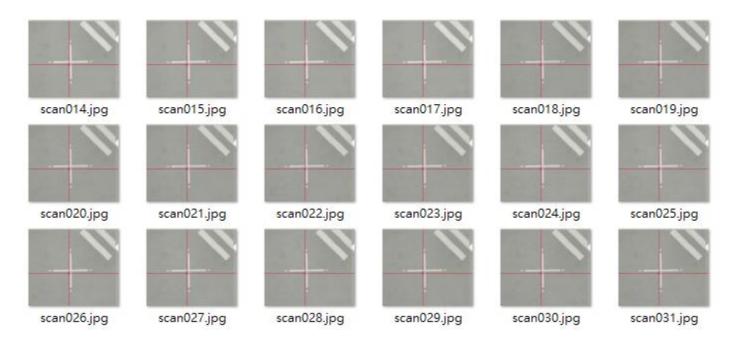


# 資料前處理(影像比對)



#### 資料蒐集

### 重複截圖問題



### How to modify 影像重複

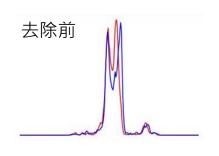


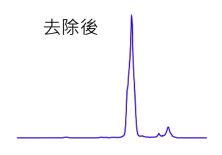


### 資料蒐集

特徵顯現(去除機台光影問題)











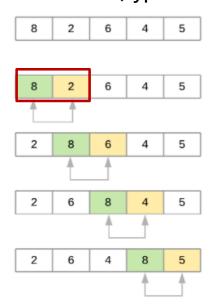


### How to modify 影像重複

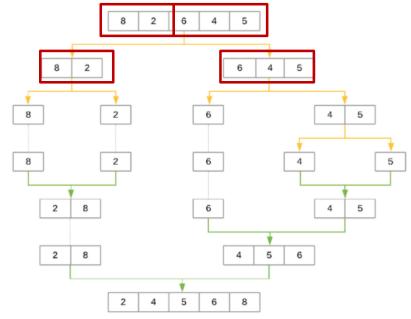




### BubbleSort(Type1.2.3.4)

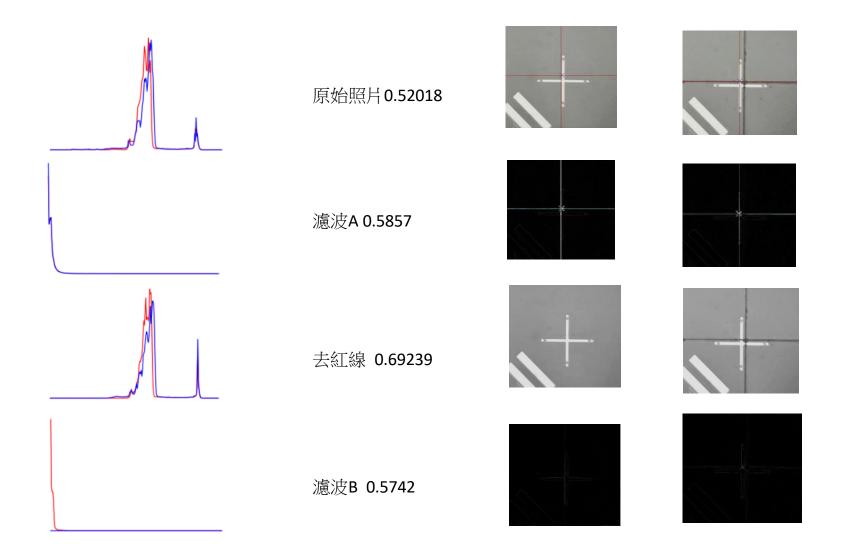


### MergeSort(Type1 \ Type2 \ Type3 \ Type4)



### 比較實驗參數



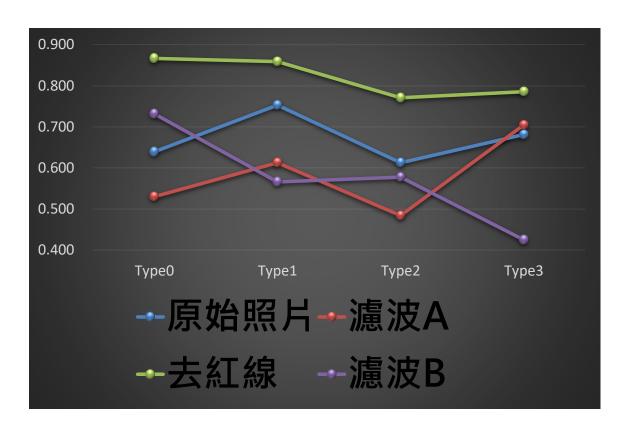


### 資料前處理(影像比對)





	原始照片	濾波A	去紅線	濾波B
Type0	0.639	0.53	0.867	0.732
Type1	0.753	0.613	0.859	0.566
Type2	0.613	0.484	0.771	0.578
Type3	0.681	0.705	0.786	0.425
AVG	0.6715	0.59425	0.82075	0.57525







兩兩比對











