

AI 工具箱

數據分析與預測



AI+ CIVIL SERVICES · PRACTICAL AI IMPLEMENTATION

AI for Civil Services

Practical and Successful Deployment

智能化政務：實戰與成功個案分享

Spencer Fung



WHAT 15 YEARS TAUGHT US

Building an AI system is easy
Making it **Practical** is **NOT** Trivial

Today we are talking about

Intelligent Rostering System

🌟 **Genie**
AI Roster Assistant



Hi! Which roster month would you like to generate?

Generate next month'|

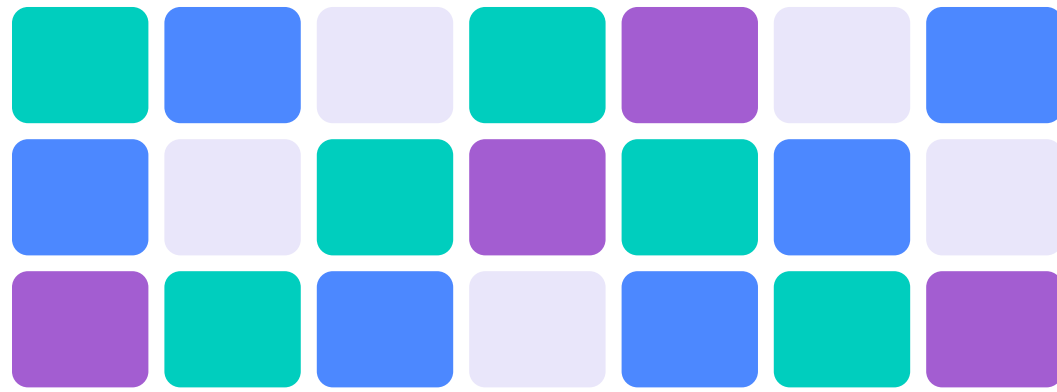


🌟 **Ask Genie**

現在請 AI 排更，幾十秒就有一張。

Ask AI for a roster today — you get one in seconds.

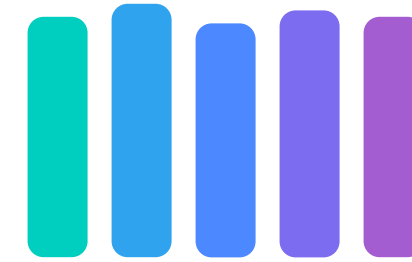
Auto-generate optimal rosters



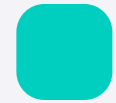
Respect rules, skills and availability

Skills Rank
Leave Rest

Balance fairness and workload



Adapt instantly to changes

 Sick leave reported · Night shift
Roster updated · 3 cover options

Explainable decisions

Every shift, with a reason

JACC



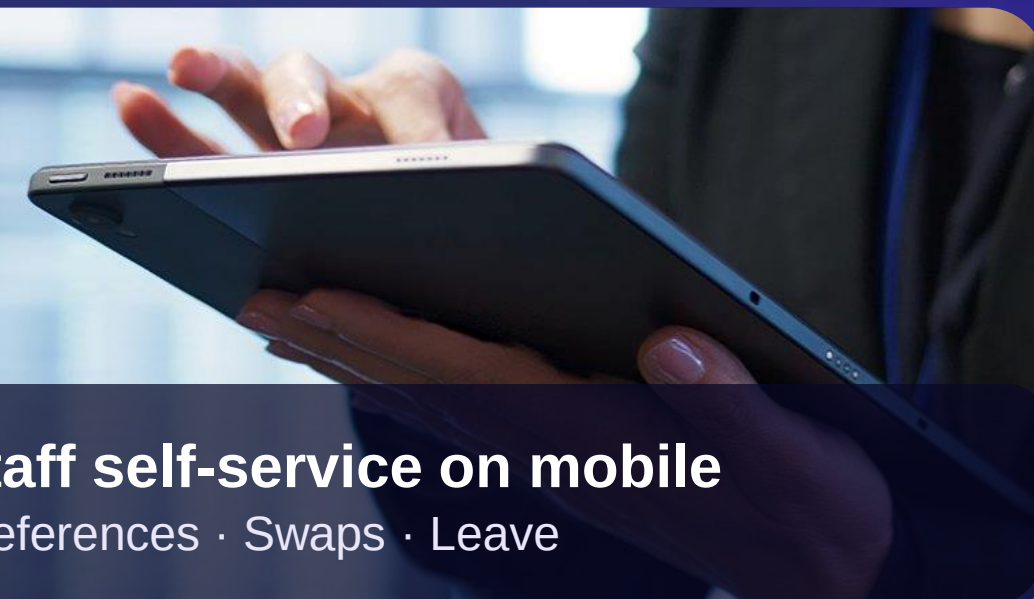
AI Rostering

Smarter schedules. Better public service.

What-if

Scenario Planning

Typhoons, surges, new posts



Staff self-service on mobile

Preferences · Swaps · Leave

Connects to existing systems



Government-scale ready



ON-PREMISE ARCHITECTURE



On-premise or government cloud · single sign-on with MFA · full audit trail

1 INPUTS

HR & staff master

Staff, grades, skills, contracts

Demand & operations

Shift demand, duties, events

Timesheets & leave

Clock-in, actual hours, leave, swaps

Rules & agreements

Labour law, union terms, allowance policy

2 INTEGRATION

HR connector

API or scheduled sync

Ops data feed

API or Excel upload

T&A sync

Daily update from time clocks

Document AI

LLM reads docs into rules

3 AI ROSTERING PLATFORM

Workforce data hub

Cleaned staff, demand and time data

Rules knowledge base

Industrial constraints, rest hours, allowances

JACC optimisation

Generates and re-rosters against all rules

LLM assistant

Explains choices, answers planner questions

Timesheet & allowance engine

Actual vs rostered hours; overtime, night and shift allowances by rule

Every decision traceable to its rule · role-based access

4 OUTPUTS

Planner workbench

Review, what-if, ask AI

Staff mobile app

Roster, swaps, leave requests

Payroll export

Overtime and allowances

Management dashboard

Cost, compliance, fairness

Users: Planners · Supervisors · Frontline staff · HR & Payroll

WHAT 15 YEARS TAUGHT US

A Practical and Successful Deployment

We must **Understand** the **Domain**



WHAT MAKES A GOOD ROSTER

A good roster goes beyond compliance. It has to work for operations and for people.

FOUR LEVELS

Each level builds on the one below. The real value sits at the top.

01

LEVEL 1

Compliant

Meets labour law, ordinances and departmental policy

HOW AI HELPS

- Rules checked on every shift
- Audit trail for each assignment

02

LEVEL 2

Efficient

Right people, right skills, at the right time

HOW AI HELPS

- Staffing matched to demand
- Less overtime and idle time

03

LEVEL 3

Flexible

Copes when plans change, without starting over

HOW AI HELPS

- Re-roster in minutes for sick leave or typhoons
- What-if scenarios before committing

04

LEVEL 4

Fair & Humane

Staff accept the roster and are willing to use it

HOW AI HELPS

- Nights, weekends and holidays shared fairly
- Preferences and swaps respected
- Fatigue Consideration

Most systems stop here

Our focus: levels 3 and 4

CASE STUDIES

Two Success Stories

From planning headache to hands-free rostering

CASE STUDY: GOVERNMENT FLYING SERVICE (GFS)



CHALLENGE

- Aviation Law and Labour Law compliance
- Complex rules and staff preferences
- Fast response to disruption

SOLUTION

- Automated roster planning
- What-if analysis for adverse weather
- Dynamic re-assignment and coach-junior pairing

RESULTS

- Lower planner workload
- Standardised rostering process
- Less human bias and error
- Balanced leave and days off





GOVERNMENT FLYING SERVICE

The AI builds the roster, checks every rule and proposes fixes. Planners approve.

The screenshot shows the OptixSolutions rostering system interface. It includes a top navigation bar with tabs for Staff List, Shift Planning, Roster Generation, Job Queue, and Settings. A sidebar on the left contains filters for Fixed Wing pilot, date range (2023-12-04 to 2023-12-31), and various action buttons like Shift Plan, Import, Generate Roster, and Publish Roster. The main area displays a roster grid for crew members, with columns for dates and shift codes. A legend on the left explains symbols for pre-assigned shifts, shift briefs, manpower levels, and violations. A 'WHAT-IF' pop-up window is visible, showing options for a typhoon signal on 18 Dec. A mobile app interface is overlaid on the right, showing a 'My Roster' screen with a calendar view and a list of requests like Shift Swap Request, Day Off Request, Duty Request, and Download Roster.

1. AI-generated roster

2. Every rule checked

3. Gaps surfaced

4. What-if scenarios

5. Daylight-aware

6. Crew app

WHAT-IF
Typhoon signal 8 on 18 Dec: 3 re-roster options, ranked by fairness and rest rules

WHAT THE AI DOES

- 1 AI-generated roster**
A full month optimised in one click: skills, rank, leave and rest
- 2 Every rule checked**
Aviation and Labour Law breaches flagged before publishing
- 3 Gaps surfaced**
Shifts the AI cannot cover queue for planner decision
- 4 What-if scenarios**
Test typhoons, sick leave or new posts before committing; AI ranks the best cover
- 5 Daylight-aware**
Sunrise and sunset built into flying duties
- 6 Crew app**
Requests feed straight back into the AI

AI ENGINE
Live

Minutes
to generate a full month

100%
hard rules checked on every shift

Ranked
cover options for every gap

CASE STUDY: NON-PROFIT ORGANIZATION (NGO)

CHALLENGE

- Time-critical tasks, e.g. medical appointments and medication
- Complex client preferences, e.g. gender, language, and visit times
- Sudden client cancellations and staff sick leave

SOLUTION

- Automated roster planning with fixed-time tasks prioritised
- Preference matching with essential and flexible rules
- Dynamic re-assignment of tasks in real time

RESULTS

- **Lower planner workload**
- **Less human bias and error**
- **Balanced workload**
- **Higher client satisfaction and continuity of care**





HOME CARE SERVICE



The AI assigns every visit, flags client risks and plans the route. Coordinators approve.

OptixSolutions

出勤管理

團隊管理

個案管理

管理員

登出

出勤管理

列表

圖示

日期: 19/08/2023

今日

上午

下午

搜尋

搜尋

重設

出勤單總數 5640

已安排數目 3384

已出動 1384

待出動 2000

待出動

已出動

未安排

FD2587 Team1 Driver A

+ 加入隊員

2

CW1

估計工作量

待出動/總出動數目 5/7

3

海昇

10樓8室 林*秀

8樓5室 陳*逸

3樓7室 郭*翔

4樓7室 王*翔

5樓7室 林*翔

13樓7室 李*翔

14樓7室 何*翔

有狗

提藥

CW2

估計工作量 80%

待出動/總出動數目 5/7

海昇

1樓8室 林*秀

7樓5室 陳*逸

3樓4室 郭*翔

4樓4室 王*翔

5樓4室 林*翔

13樓4室 李*翔

14樓4室 何*翔

CW3

估計工作量 80%

待出動/總出動數目 5/7

海昇

1樓6室 林*秀

7樓6室 陳*逸

3樓6室 郭*翔

4樓6室 王*翔

5樓6室 林*翔

13樓6室 李*翔

14樓6室 何*翔

Dummy

海昇

海昇

5

(3)

篩選: 海昇, 海曜

海昇

海昇

海曜

11樓8室 林*玉

11樓2室 林*玉

11樓4室 林*玉

AI SUGGESTION

3 visits unassigned: CW2 is on route with 70% workload

1

AI 工作分配

發佈

4

Map

6

我的工作清單

歡迎, 陳大明

車輛 FD2587

路線 海怡, 西村, 黃竹坑

2/7

6 海昇 10樓8室 林*秀 上 未完成

備註 費收費, 金額為 \$126.5

完成

7 海昇 8樓5室 陳*逸 上 未完成

備註 費收費, 金額為 \$126.5

有狗

完成

1 海曜 3樓7室 郭*翔 上 已完成

備註 無

提藥

09:30

2 海曜 4樓7室 王*翔 上 已完成

備註 無

10:30

3 海曜 13樓7室 李*翔 上 已完成

備註 無

11:30

4 海曜 14樓7室 何*翔 上 已完成

備註 無

11:45

WHAT THE AI DOES

- AI 工作分配**
One click assigns every visit by time window, skills and client preference
- Balanced workload**
AI keeps each carer's load and progress even
- Risks flagged**
Notes like 有狗 or 提藥 surfaced on the card
- Route optimised**
Visits sequenced to cut travel time
- Re-plans in real time**
Cancellations and sick leave re-assigned instantly
- Carer app**
Today's visits, notes and one-tap completion

AI ENGINE
Live

Minutes

to assign a full day of visits

First

fixed-time medication visits placed

Flagged

client risks on every visit, e.g. 有狗

BEYOND ROSTERING: OTHER AI OPPORTUNITIES

Document Analytics Solution

Provides a practical and cost-effective way to automate domain-specific textual-based decision process



The logo for Intrinsity, featuring three colored dots (red, yellow, blue) above the word "intrinsity" in a lowercase, sans-serif font.

AI for Planning, Scheduling, and Optimization

Drive operational efficiency through optimizing resource allocation



The logo for JACC, featuring the letters "JACC" in a bold, sans-serif font, with the "J" and "A" in red and the "C" and "C" in white.



CLIENTS & PARTNERS

Rich experience in delivering Enterprise Solutions



Thank you

Visit our booth for the live demo

