

Optimising PA Events to Minimise Cancellations due to Inclement Weather

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14th January 2023



Don't let your perfect event exist only on paper

Reduce event cancellations

Plan your events around
local weather effectively!



46%

annual rainfall rate



>60%

rainfall rate in ...



<30%

rainfall rate in ...



<5 hours

*leave the sunblock at
home...*

**“No two
months are
identical”**

- *our team*

rainfall
humidity
temperature
sunshine

**“TUG ON ANYTHING IN
NATURE AND YOU WILL FIND
IT CONNECTED TO
EVERYTHING ELSE”**

- *John Muir*

AVOID



Oct, Nov, Dec

wet, wetter, wettest

GUARD



Jan, Feb, Mar

*dry but
unpredictable*

ADAPT



Apr & May

*fair weather but
afternoon showers*

REJOICE

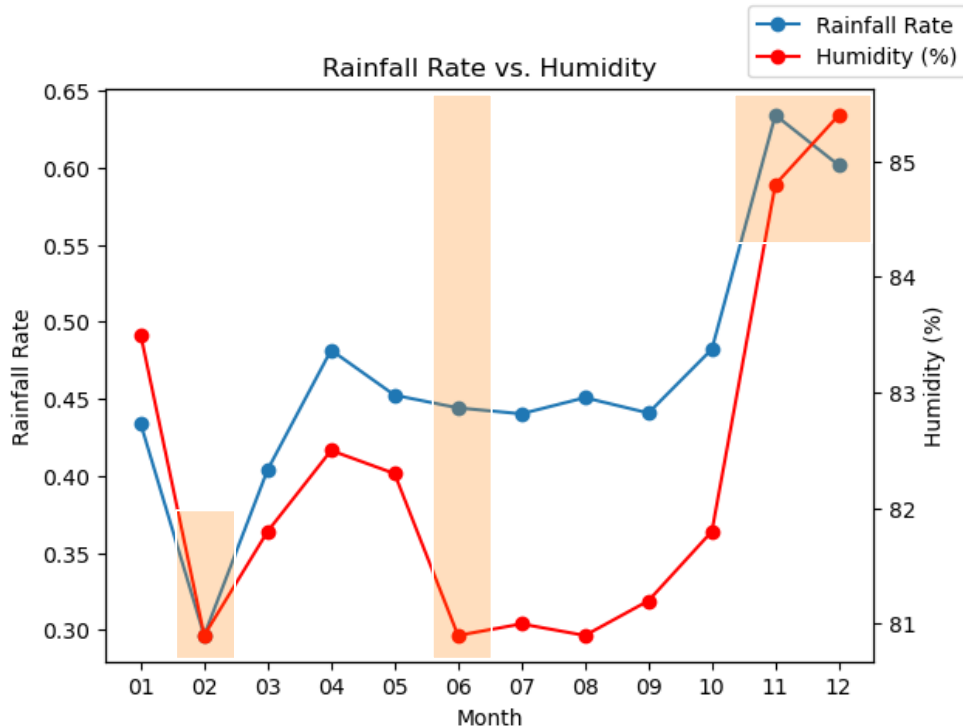


Jun, Jul, Aug, Sep

*sunblock, sunblock,
sunblock*

“**AGAR-AGAR**”

The higher the humidity, the higher the rainfall rate



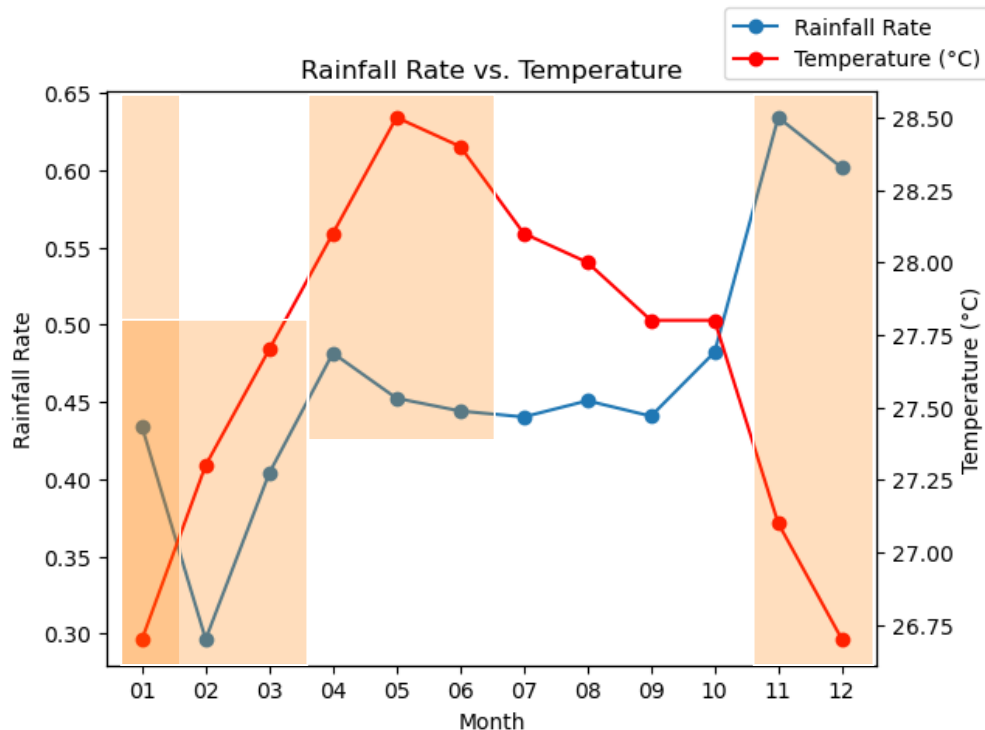
>86%

half of the time, Nov & Dec

<82%

a quarter of the time,
Feb & Jun

The higher the temperature, the lower the rainfall rate



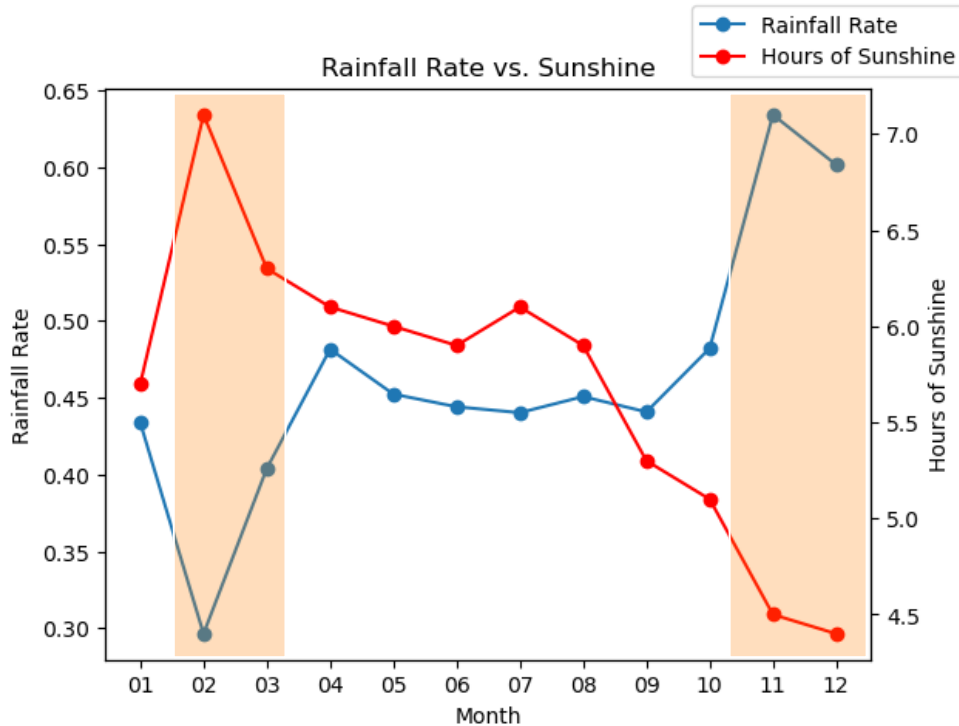
coldest months

Nov, Dec...and Jan

hottest months

Apr, May & Jun
(not the driest months)

The higher the number of hours of sunshine,
the lower the rainfall rate



<4 hours

rainfall rates > 57%
> half of the time, Nov & Dec

>=7.5 hours

> half of the time, Feb
a quarter of the time, Mar

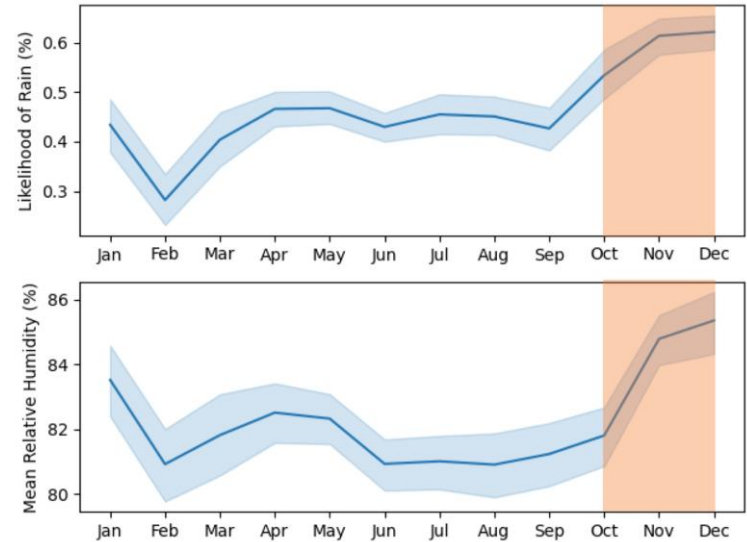
recommendations

by month set

Oct-Dec: **A**void outdoor activities

Plan for indoor activities which are less strenuous in open air setting

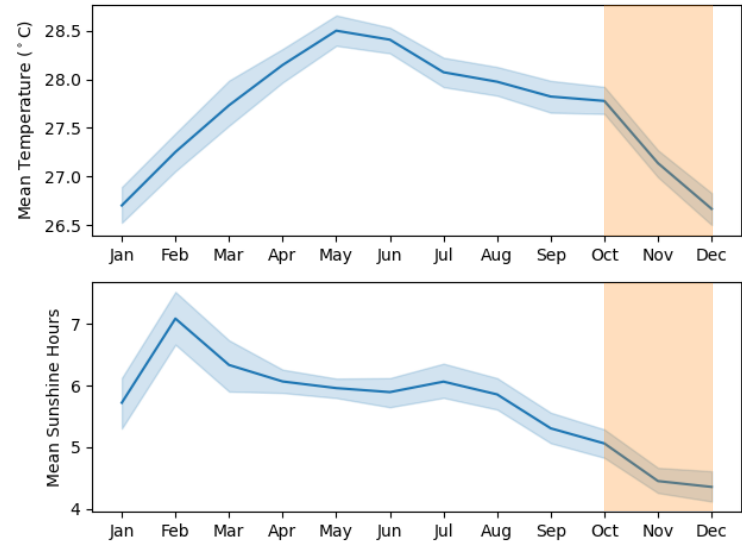
1. Indoor activities recommended, with **highest likelihood of rainfall in the year** expected for this period
2. We can also expect **above average relative humidity levels**, hence activities should be less strenuous



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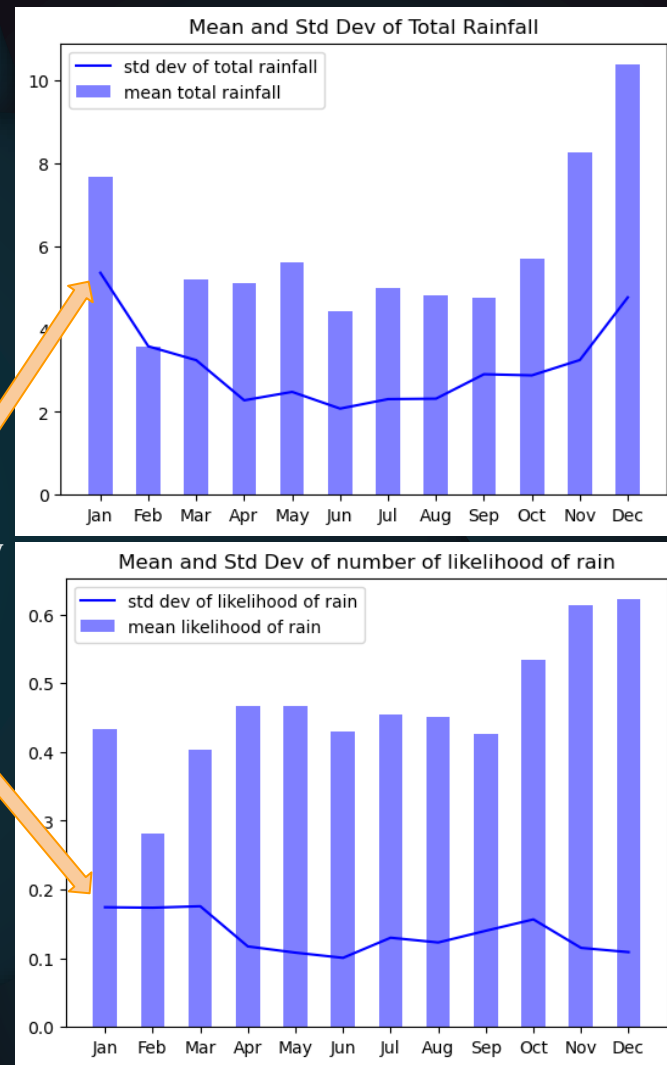
3. The **lower temperatures** and **less sunshine hours** make it ideal for open air events under shelter (e.g. roadshows/workshops)



Jan-Mar: **Guard** against volatile weather

Plan for outdoor activities with
perfect conditions on dry days

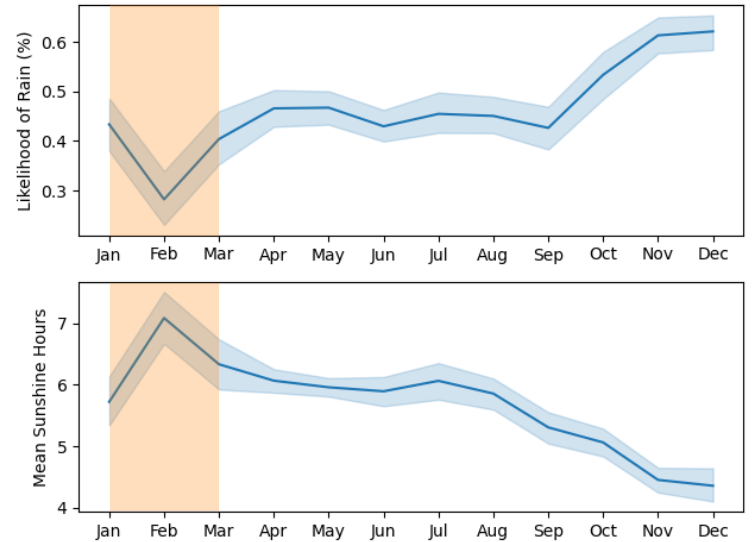
High Standard
Deviation in January
implying higher
volatility in weather
patterns



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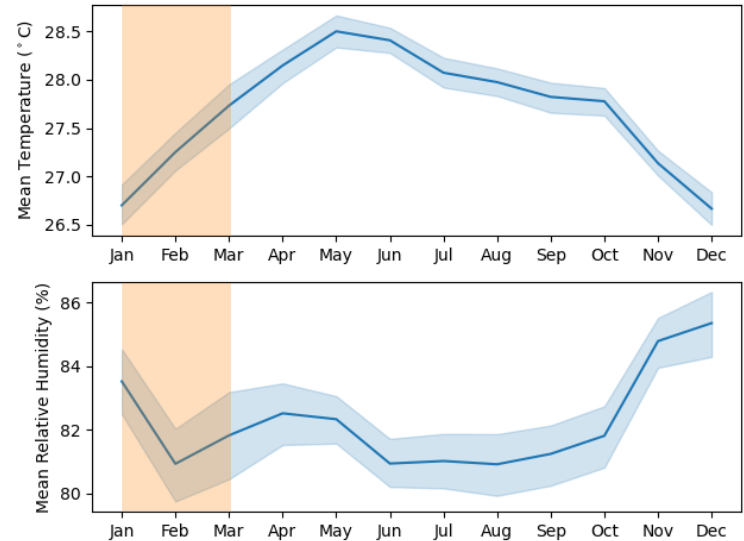
1. With the **lowest likelihood of rain and highest sunshine hours** during Feb-Mar, conditions are perfect for outdoor activities
2. However, wet weather plans are encouraged as **weather patterns are still volatile post-monsoon**



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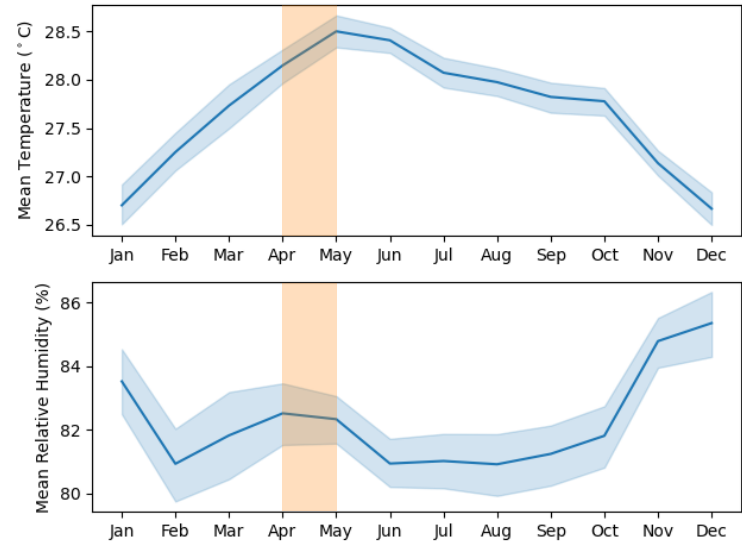
3. **Lower temperatures and relative humidity levels**
also allow for more strenuous activities such as
nature hike, heritage tours, etc



Apr-May: Adapt activities to hot and humid weather

Plan for a variety of casual activities and be prepared for wet weather

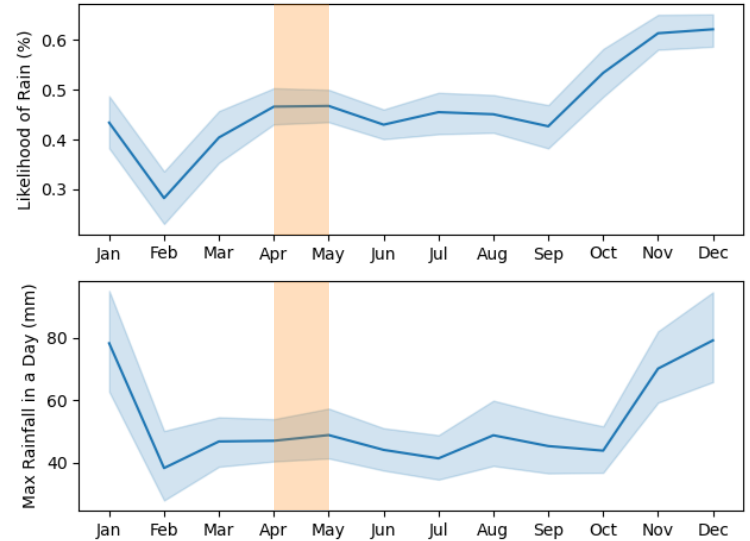
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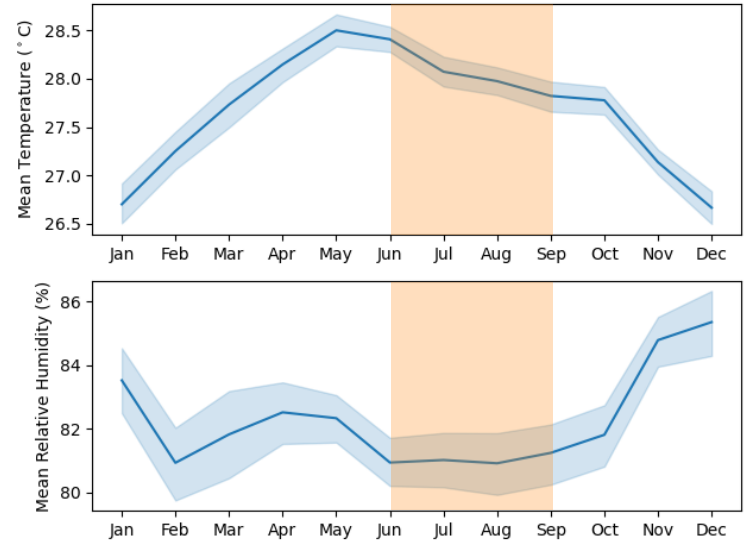
3. While there is **less than 50% chance of rain historically** and **rainfall not expected to be heavy**, wet weather plans still recommended
4. Plan for indoor activities in the afternoon when **rainfall is expected and can be prolonged**



Jun-Sep: Rejoice with all kinds of outdoor activities

Plan for a good range activities and finetune with more accurate forecast

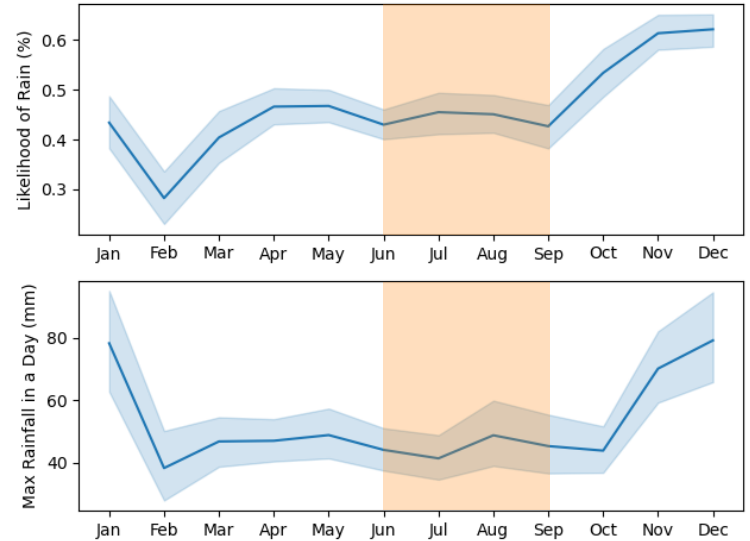
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3. Wet weather plans can be made based on more accurate forecast closer to activity day, as **likelihood of rain is low**
4. Wet weather plans can be in form of scheduled short breaks as **rainfall is not expected to be too heavy or prolonged** (i.e. short thunderstorms)



AGAR-AGAR principle
provides a useful baseline
for planning outdoor
activities

AVOID



Oct, Nov, Dec

*Avoid outdoor
activities*

GUARD



Jan, Feb, Mar

*Guard against
volatile weather*

ADAPT



Apr & May

*Adapt activities to
hot and humid*

REJOICE



Jun, Jul, Aug, Sep

*Rejoice with all
kinds of activities*

This is the first step towards more data-driven event planning

To be even more prepared in outdoor event planning, we have to move beyond **AGAR-AGAR**. You can consider

1. **Supplementing** our wet weather plans with more accurate forecasts closer to the date
2. **Conducting** more in-depth analysis of with more granular data (e.g., intraday weather patterns) or additional information (e.g., monsoon seasons)
3. **Setting up** a predictive model to provide more timely planning guidance

Q&A

ANNEX

Why are the correlations this way?

humidity

amount of water vapour in the air

hot days

more evaporation
→ less humid

+ humidity

more humid →
more water vapour
→ condensation →
cloudier → rain

humid days

more likely to rain

low humidity

lower rainfall rates

+ temperature

more cloud cover
→ sunlight gets
blocked → can
lower
temperatures

Understanding Singapore's weather

1. Monsoon Rain-belt

- 'Actual' Northeast Monsoon period: Dec to Mar
- Progressive movement of monsoon rain-belt causes rainy season to start in Oct and peak in Dec
- Rain-belt moves away but winds are still strong → subtropical high pressure belt is 'blown' to us, creating a dry season starting from Feb
- Jan is the in-between period, so it tends to be a little volatile

Understanding Singapore's weather

2. Sumatra Squalls

- Tends to be during the Southwest Monsoon period, because of the wind direction needed
- Rain during this period is usually a bit more 'targeted':
 - Time of day: predawn, morning
 - Duration: 1 to 2 hours
 - Type of rainfall: stormy, might be very windy too

Understanding Singapore's weather

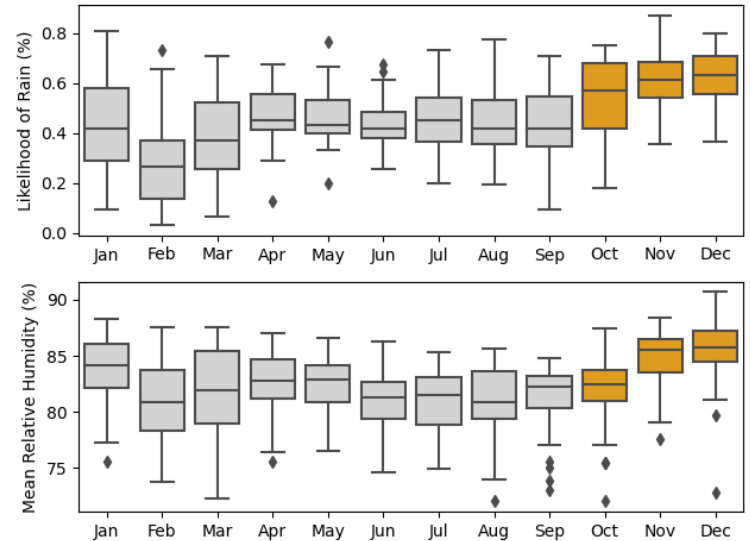
3. Sea Breezes

- Temperature difference between land and sea is needed
 - Tends to be during hot afternoons
- Wind can't be too strong
 - Inter-monsoon periods
- Can rain for fairly extended periods (afternoon till evening)

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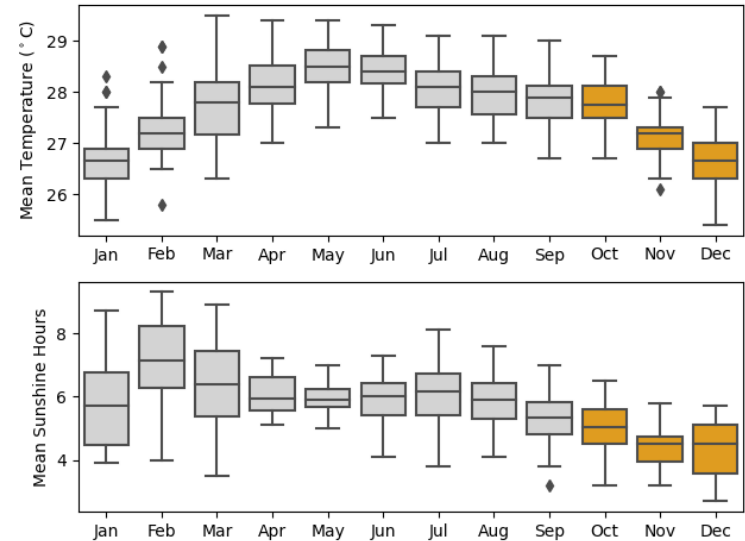
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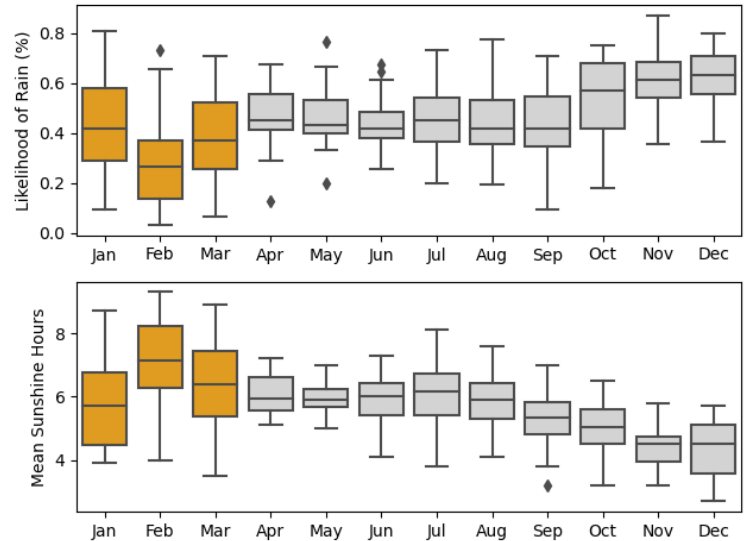
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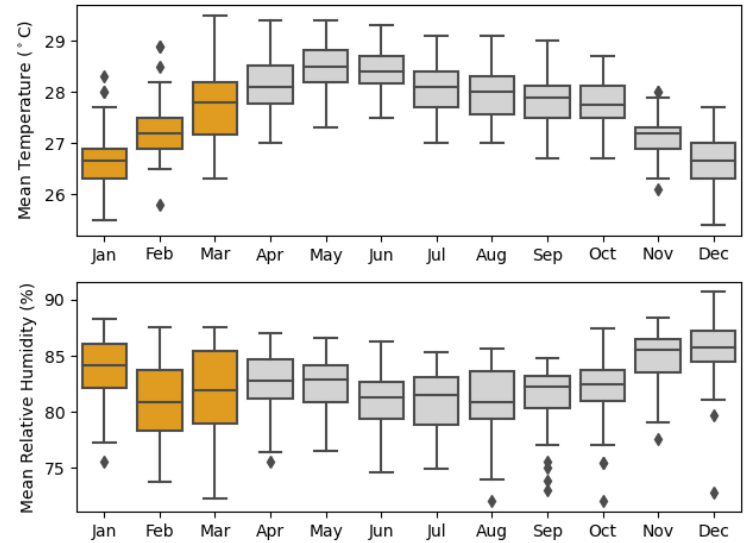
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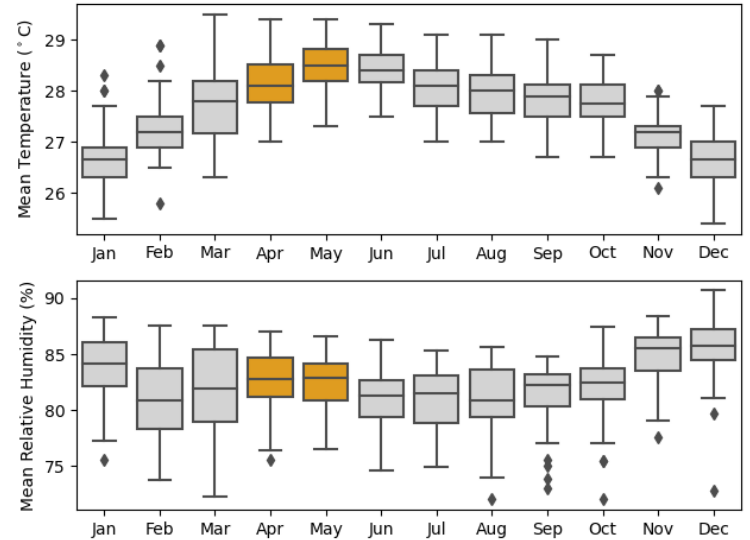
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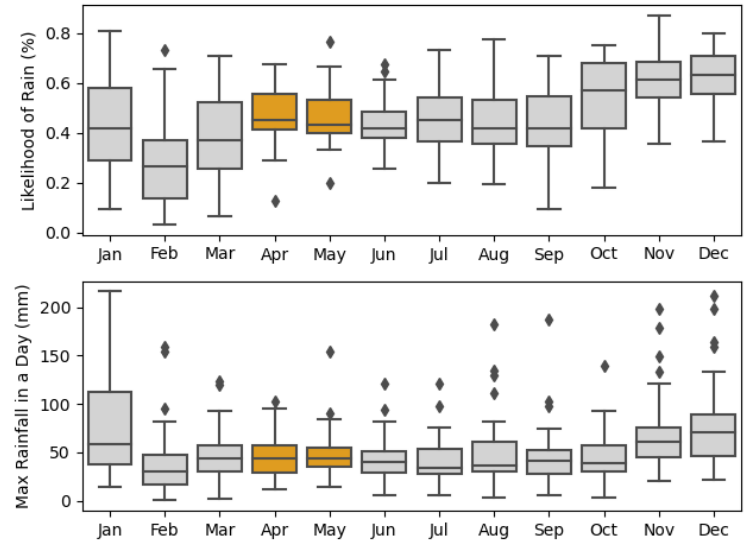
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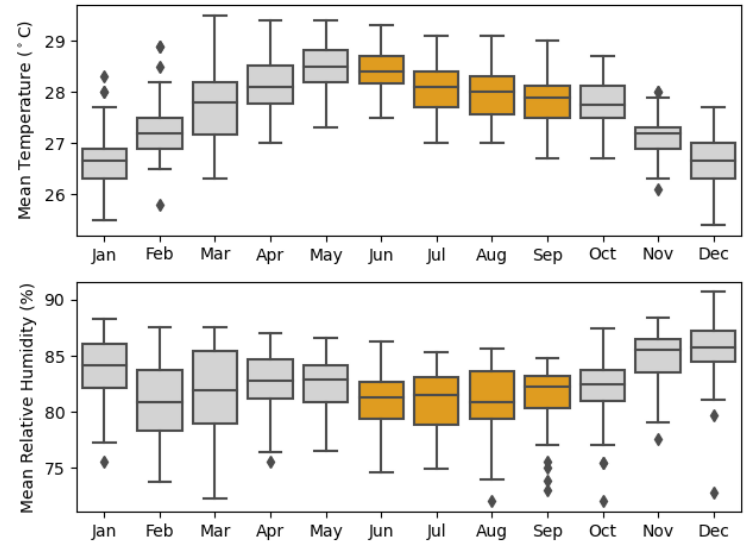
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