







Bayes on the Beach Challenge:

Coolangatta Gold

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Ironman Race

- Iconic Gold Coast surf lifesaving race.
- Organised by Surf Lifesaving Australia.

Australian Film

• 1984 film starring actors and real ironmen.

Bayes on the Beach Cocktail

- A fictional cocktail invented for this challenge!
- Based on a particular specialty Martini.





R + Stan

- Ensure R is installed.
 https://cran.csiro.au/
- Invoke Stan via the rstan package.
 https://mc-stan.org/users/interfaces/rstan
- RStudio may be helpful too.
 https://posit.co/download/rstudio-desktop/





Secret Ingredient

Coolangatta Gold

- 1.5 ounces SECRET INGREDIENT.
- 0.5 ounces yellow Chartreuse.
- 1 dash orange bitters.
- Garnish: pineapple slice.

Challenge

- Find the secret ingredient.
- Use Bayesian mixture modelling.



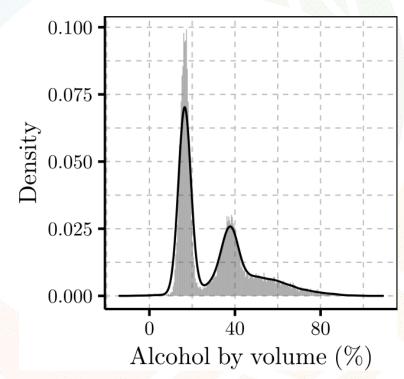


Cocktail Testing

- A mixture of 23,296 test cocktails.
- They used a common base ingredient set.
- Each one also had a secret ingredient added.
- The secret (alcoholic) ingredient could vary between test cocktails.
- Small number of distinct secret ingredients.

Imprecise Alcohol by Volume

- Different interingredient means.
- Dispersed intraingredient values.



Probability density function of the alcohol by volume for the secret ingredient in 22,315 test cocktails.