An Example R Markdown Document

(A Subtitle Would Go Here if This Were a Class)

Miao Cai

Department of Epidemiology and Biostatistics

SAINT LOUIS UNIVERSITY

COLLEGE FOR PUBLIC HEALTH
AND SOCIAL JUSTICE

Sheena Easton and Game Theory

Sheena Easton describes the following scenario for her baby:

1. Takes the morning train
2. Works from nine ‘til five
3. Takes another train home again
4. Finds Sheena Easton waiting for him

Rick Astley's Re-election Platform

Rick Astley's campaign promises:

- Never gonna give you up.
- Never gonna let you down.
- Never gonna run around and desert you.
- Never gonna make you cry.
- Never gonna say goodbye.
- Never gonna tell a lie and hurt you.

Are these promises (if credible) sufficient to secure re-election?

Rick Astley and Median Voter Theorem

Whereas these pledges conform to the preferences of the **median voter**, we expect Congressman Astley to secure re-election.

Caribbean Queen and Operation Urgent Fury

Billy Ocean released “Caribbean Queen” in 1984.

- Emphasized sharing the same dream
- Hearts beating as one

“Caribbean Queen” is about the poor execution of Operation Urgent Fury.

- Echoed JCS chairman David Jones’ frustrations with military establishment.

Billy Ocean is advocating for what became the Goldwater-Nichols Act.

- Wanted to take advantage of **economies of scale**, resolve **coordination problems** in U.S. military.

The Good Day Hypothesis

We know the following about Ice Cube's day.

1. The Lakers beat the Supersonics.
2. No helicopter looked for a murder.
3. Consumed Fatburger at 2 a.m.
4. Goodyear blimp: "Ice Cube's a pimp."

The Good Day Hypothesis

This leads to two different hypotheses:

- H_0: Ice Cube's day is statistically indistinguishable from a typical day.
- H_1: Ice Cube is having a good (i.e. greater than average) day.

These hypotheses are tested using archival data of Ice Cube's life.

LaTex Equations

The likelihood function of a non-homogeneous Poisson process (NHPP) with a power law process (PLP) intensity function is:

$$
\begin{aligned}
f(n, t_1, t_2, \cdots, t_n) &= f(n) f(t_1, t_2, \cdots, t_n | n) \\
&= \frac{e^{-\int_0^\tau \lambda(u)du} [\int_0^\tau \lambda(u)du]^n}{n!} n! \frac{\prod_{i=1}^n \lambda(t_i)}{[\Lambda(\tau)]^n} \\
&= \Big(\prod_{i=1}^n \lambda(t_i) \Big) e^{-\int_0^\tau \lambda(u)du} \qquad (1) \\
&= \Big(\prod_{i=1}^n \frac{\beta}{\theta} (\frac{t_i}{\theta})^{\beta-1} \Big) e^{-(\tau/\theta)^\beta}, \\
n &= 0, 1, 2, \cdots, \quad 0 < t_1 < t_2 < \cdots < t_n
\end{aligned}
$$

Include figures

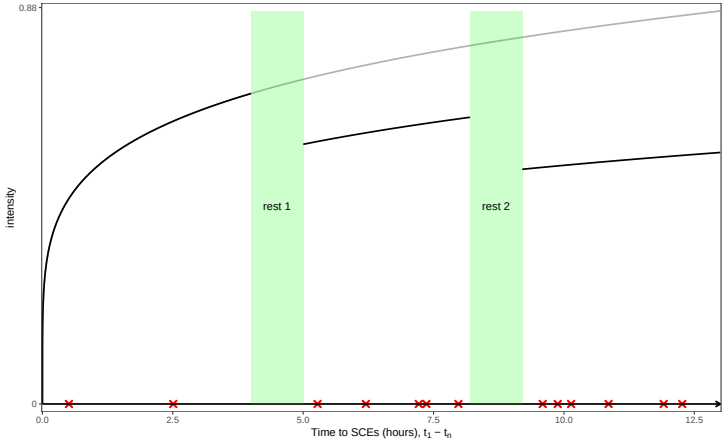

Figure 1: The intensity function, SCEs, and rests of a jump-point PLP

A Total Conflict Game Between Sheena Easton and Her Baby

	XX	YY
Baby Home Again	-100, **100**	**100**, 0
Baby Stays at Work	**50**, 0	-100, **100**

Sheena Easton and her baby are playing a **zero-sum (total conflict) game**.

- Akin to Holmes-Moriarty game (see: von Neumann and Morgenstern)
- Solution: **mixed strategy**

Python

Wonderful Python packages are available:

- `pandas`,
- `numpy`,
- `sci-kit`,
- `...`
- `keras`

R

Wonderful R packages are available:

- `tidyverse`
- `data.table`
- `caret`

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