LaTeX 一份简短的 Beamer 模板

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XMU WISER

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Outline

What's this course about?

- Specific statistical methods for many research problems
- Hyperlinks (click here)
  - How to learn (or create) new methods
  - Inference: Using facts you know to learn about facts you don't know
- How to write a publishable scholarly paper
- All the practical tools of research — theory, applications, simulation, programming, word processing, plumbing, whatever is useful
- $\rightsquigarrow$ Outline and class materials:

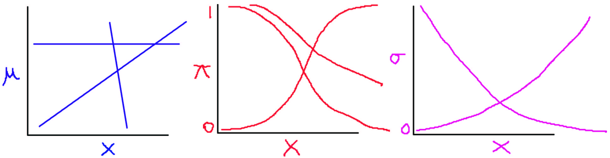
  j.mp/G2001

  - The syllabus gives topics, not a weekly plan.
  - We will go as fast as possible subject to everyone following along
  - We cover different amounts of material each week

Alerts

- First level alert
- Second level alert
- Third level alert
- Fourth level alert
- Fifth level alert

Systematic Components: Examples



- $E(Y_i) \equiv \mu_i = X_i\beta = \beta_0 + \beta_1 X_{1i} + \cdots + \beta_k X_{ki}$
- $\Pr(Y_i = 1) \equiv \pi_i = \frac{1}{1+e^{-x_i\beta}}$
- $V(Y_i) \equiv \sigma_i^2 = e^{x_i\beta}$
- Interpretation:
  - Each is a class of functional forms
  - Set β and it picks out one member of the class
  - β in each is an "effect parameter" vector, with different meaning

Negative Binomial Derivation

Recall:

one two three

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$$\Pr(A|B) = \frac{\Pr(AB)}{\Pr(B)} \implies \Pr(AB) = \Pr(A|B)\Pr(B)$$

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$$\mathsf{NegBin}(y|\phi,\sigma^2) = \int_0^\infty \mathsf{Poisson}(y|\lambda) \times \mathsf{gamma}(\lambda|\phi,\sigma^2) d\lambda$$

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$$\begin{aligned}\mathsf{NegBin}(y|\phi,\sigma^2) &= \int_0^\infty \mathsf{Poisson}(y|\lambda) \times \mathsf{gamma}(\lambda|\phi,\sigma^2)d\lambda \\ &= \int_0^\infty \P(y,\lambda|\phi,\sigma^2)d\lambda\end{aligned}$$

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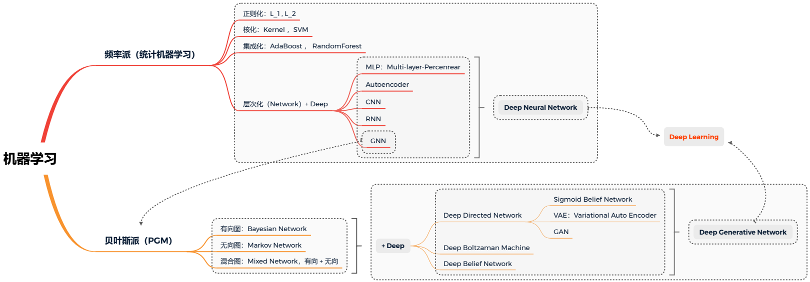
$$\begin{aligned}
\mathsf{NegBin}(y|\phi,\sigma^2) &= \int_0^\infty \mathsf{Poisson}(y|\lambda) \times \mathsf{gamma}(\lambda|\phi,\sigma^2) d\lambda \\
&= \int_0^\infty \P(y,\lambda|\phi,\sigma^2) d\lambda \\
&= \frac{\Gamma\left(\frac{\phi}{\sigma^2-1} + y_i\right)}{y_i!\Gamma\left(\frac{\phi}{\sigma^2-1}\right)} \left(\frac{\sigma^2-1}{\sigma^2}\right)^{y_i} \left(\sigma^2\right)^{\frac{-\phi}{\sigma^2-1}}
\end{aligned}$$

2 columns

- SVM
- GMM
- EM



数据与 tabular 环境

Category of your contents	Different types of each Category		other type of your data
	Different types of each Category		other type of your data
	....	θ^{-1}kg	....
Type of date (numbers)	0.0056 $\pm$ 0.0097, 0.0021 $\pm$ 4.0056		3.5 $\times$ 10^5 ; 5.43 (9.30%)
	0.0056 $\pm$ 0.0097, 0.0021 $\pm$ 4.0056		3.5 $\times$ 10^5 ; 5.43 (9.30%)
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	0.0056 $\pm$ 0.0097, 0.0021 $\pm$ 4.0056		3.5 $\times$ 10^5 ; 5.43 (9.30%)
Mathematical formulas	$\frac{\mu^2}{\pi-2\theta} \times \sqrt[3]{\\|\nu_i-\hat{\phi}\\|} + \lim_{s\to\infty}\int_0^{+\infty} f(x)e^{xsi}\mathrm{d}x$		$f(x) \in C^1[0,+\infty], \\|f(x^n)\\|_2 \leqslant \lambda$
	$\frac{\mu^2}{\pi-2\theta} \times \sqrt[3]{\\|\nu_i-\hat{\phi}\\|} + \lim_{s\to\infty}\int_0^{+\infty} f(x)e^{xsi}\mathrm{d}x$		$f(x) \in C^1[0,+\infty], \\|f(x^n)\\|_2 \leqslant \lambda$
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Language description	This is the element described in your language		Mathematical language description
	This is the element described in your language		Mathematical language description
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Projection data	3.5 $\times$ 10^5 This is the element described in your language		0.0056 $\pm$ 0.0097, 0.0021 $\pm$ 4.0056
	3.5 $\times$ 10^5 This is the element described in your language		0.0056 $\pm$ 0.0097, 0.0021 $\pm$ 4.0056
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tabel 1 Contents of different types of tables.

Word2Vec

topic 1			topic 2			topic 3			topic 4		
1	科技	0.9995	2	板块	mm	3	科技	mm	4	3500	mm
1	板块	0.9994	2	锂电池	mm	3	新能源	mm	4	反弹	mm
1	调整	0.9994	2	a 股	mm	3	in	机构	4	指数	
1	资金	0.9994	2	芯片	mm	3	in	板块	4	清仓	
1	业绩	0.9994	2	散户	mm	3	in	半导体	4	券商	mm
1	公司	0.9994	2	震荡	mm	3	in	中国	4	科技	mm
1	股价	0.9994	2	早盘	mm	3	in	芯片	4	in	mm
1	股市	0.9994	2	inches	mm	3	in	mm	4	in	mm
1	大跌	0.9994	2	inches	mm	3	in	mm	4	in	mm
1	基金	0.9994	2	inches	mm	3	in	mm	4	in	mm

tabel 2 Word2Vec of texts

Structural Features

Levels of Structure

- usual LaTeX \section, \subsection commands
- ‘frame’ environments provide slides
- ‘block’ environments divide slides into logical sections
- ‘columns’ environments divide slides vertically (example later)
- overlays (à la prosper) change content of slides dynamically

例 (Overlay Alerts)

On the first overlay, this text is highlighted (or *alerted*).
On the second, this text is.

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Algoritmos 代码 1

Algorithm 1: Algorithm Example

input : x: float, y: float

output: r: float

```
while True do
    r = x + y;
    if r >= 30 then
        "O valor de r é maior ou iqual a 10.";
        break;
    else
        "O valor de r = ", r;
    end
end
```

Reviewing DeepWalk algorithm

Algorithm 2: Reviewing random walk + skip gram

for $n = 1, 2, ..., N$ **do**

Pick w_1^n according to a probability distribution $P(w_1)$. Generate a vertex sequence $(w_1^n, \cdots, w_L^n)$ of length L by a random walk on network G ;

for $j = 1, 2, ..., L\text{-}T$ **do**

for $r = 1, 2, ..., T$ **do**

Add vertex-context pair $\left(w_j^n, w_{j+r}^n\right)$ to multiset $\mathcal{D}$;

Add vertex-context pair $\left(w_{j+r}^n, w_j^n\right)$ to multiset $\mathcal{D}$

Run SGNS on $\mathcal{D}$ with b negative samplpes.

Code blocks

```python
# Say hello in Python
def hello(name):
return("Hello" + " " + name)

```

Code blocks

```python
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def hello(name):
return("Hello" + " " + name)

```

```c
/* Say hello in C */
#include <stdio.h>
int main()
{
  char name[256];
  fgets(name, sizeof(name), stdin);
  printf("Hello %s", name);
  return(0);
}

```

Theorems and Proofs

The proof uses *reductio ad absurdum*.

定理

There is no largest prime number.

证明.

1. Suppose p were the largest prime number.

4. But $q+1$ is greater than 1, thus divisible by some prime number not in the first p numbers. $\square$

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1. Suppose p were the largest prime number.
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定理

There is no largest prime number.

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1. Suppose p were the largest prime number.
2. Let q be the product of the first p numbers.
3. Then $q+1$ is not divisible by any of them.
4. But $q+1$ is greater than 1, thus divisible by some prime number not in the first p numbers. □

Blocks

Normal block

A set consists of elements.

Alert block

$2 = 2.$

Example block

The set $\{1, 2, 3, 5\}$ has four elements.

Details

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Thanks!