

Computación distribuida.

Aplicaciones de Relojes Vectoriales.

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1 Introducción.

- Tiempo Vectorial.
- Relojes Vectoriales.
- Algoritmo.

2 Propiedades.

- Algunos enunciados.
- Reducción de costo de comparaciones de dos vectores.
- Relacionando el tiempo vectorial con estados globales.
- Desventajas.

3 Aplicaciones.

- Determinando Propiedades Globales.
- Un problema de conjuntos.

4 Relojes de Bloom.

- Introducción.
- Filtro Bloom.
- Relojes de bloom.
- Aplicaciones y comparación con los relojes vectoriales.

Los relojes vectoriales son un tipo de reloj lógico propuesto de manera independiente por *Colin J. Fidge* y *Friedemann Mattern* en 1988.



Esta técnica consiste en un mapeo entre eventos en una historia distribuida y vectores enteros.



Sistema Vectorial de Relojes. Es un mecanismo capaz de caracterizar estados locales (en adelante, eventos) en un sistema distribuido, asociando un valor vectorial a cada estado.

Tiempo Vectorial. Es la noción de tiempo capturada por los relojes vectoriales.

Caracterización Formal del Tiempo Vectorial. Sea $\text{date}(e)$ la caracterización asociada a un evento e , de tal manera que se cumple:

1. $\forall_{e_1, e_2} : (e_1 \rightarrow e_2) \Leftrightarrow \text{date}(e_1) < \text{date}(e_2).$
2. $\forall_{e_1, e_2} : (e_1 \parallel e_2) \Leftrightarrow \text{date}(e_1) \parallel \text{date}(e_2).$



Flux recommends the use of Roboto or Overpass font and a font size of 9pt.

```
\documentclass[9pt]{beamer}  
\usepackage[sfdefault]{roboto}
```

Flux also implements default typographies.

- Regular
- **Alert**
- **Example**
- *Italic*
- **Bold**



Flux also includes custom footnote integration. For instance, this **element**¹ and this **element**² provide a footnote.

¹Footnotes are notes placed at the bottom of a page. They cite references or comment on a designated part of the text above it. For example, say you want to add an interesting comment to a sentence you have written, but the comment is not directly related to the argument of your paragraph.

²Footnotes are not just for interesting comments, however. Sometimes they simply refer to relevant sources – they let your reader know where certain material came from, or where they can look for other sources on the subject.



Items

- Cats
- Dogs
- Birds

Enumerations

1. First
2. Second
3. Last

Descriptions

Apples Yes
Oranges No
Grappes No

Note the following demo slides are directly taken from metropolis theme. Copyright 2014 Matthias Vogelgesang.
Give a look at <https://github.com/matze/mtheme/tree/master/demo>

Table: Largest cities in the world (source: Wikipedia)

City	Population
Mexico City	20,116,842
Shanghai	19,210,000
Peking	15,796,450
Istanbul	14,160,467

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Mexico City	20,116,842
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Flux theme comes with three pre-defined block style collections.
Native style (default) available as `\setblockstyle{native}`

Default

Block content.

Alert

Block content.

Example

Block content.



Flux theme comes with three pre-defined block style collections.
NoBackground style available as `\setblockstyle{nobackground}`

Default

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Alert

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Example

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Flux theme comes with three pre-defined block style collections.
Metropolis style available as `\setblockstyle{metropolis}`

Default

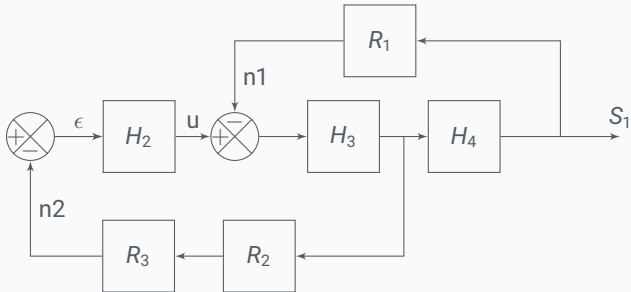
Block content.

Alert

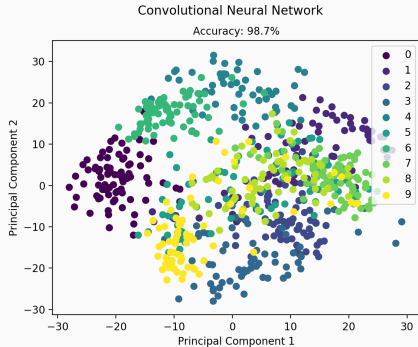
Block content.

Example

Block content.



Bloc diagram example from **texample.net**



Binary Softmax classifier

$$\sigma(\sum_i w_i x_i + b)$$

Loss function

$$L_i = -\log\left(\frac{e^{f_{y_i}}}{\sum_j e^{f_j}}\right)$$

cross entropy

This is a plain frame.
Use it to display full page images.



References I



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Inspired by **Metropolis** theme from Matthias Vogelgesang.
<https://github.com/matze/mtheme>