

Latex snippets

J r mie DECOCK
<http://www.jdhp.org>

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Abstract

TODO

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Introduction

TODO

1 Snippets

1.1 Cite

Blablabla [1].

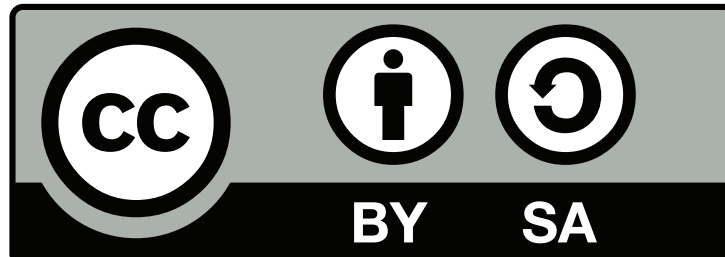


Figure 1: Test

1.2 Lists

- item 1
- item 2
- ...

1. item 1
2. item 2
3. ...

First item 1

Second item 2

Last ...

1.3 Sizes

small

footnotesize

scriptsize

tiny

1.4 Colors

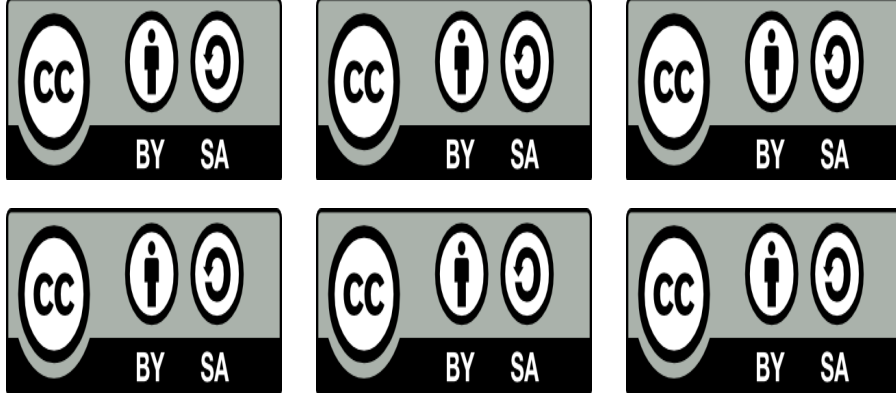
Red Green Blue

1.5 Image

1.6 Subfigures

1.7 Equations

$$V(x) = \max_{a \in \Gamma(x)} \{F(x, a) + \beta V(T(x, a))\}$$



$$\begin{aligned}
 V(x) &= \max_{a \in \Gamma(x)} \{F(x, a) + \beta V(T(x, a))\} \\
 V(x) &= \max_{a \in \Gamma(x)} \{F(x, a) + \beta V(T(x, a))\} \tag{1}
 \end{aligned}$$

1.8 Equation array

$$\begin{aligned}
 \text{Expectation of N} &= \sum_{i=1}^n \mathbb{E}(Z_i) \\
 &= \sum_{i=1}^n \frac{\gamma}{d^{\beta/2}} \frac{c(d)^\beta}{i^{\alpha\beta}} \\
 &= \frac{\gamma}{d^{\beta/2}} c(d)^\beta \sum_{i=1}^n \frac{1}{i^{\alpha\beta}} \\
 &= z
 \end{aligned}$$

$$\text{Variance of N} = \sum_{i=1}^n V(Z_i) \tag{2}$$

$$\begin{aligned}
 &\leq \sum_{i=1}^n \mathbb{E}(Z_i) \quad (\text{as } V(Z_i) \leq \mathbb{E}(Z_i)) \tag{3} \\
 &\leq z
 \end{aligned}$$

1.9 Matrices

$$A_{m,n} = \begin{pmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,n} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m,1} & a_{m,2} & \cdots & a_{m,n} \end{pmatrix}$$

$$M = \begin{bmatrix} \frac{5}{6} & \frac{1}{6} & 0 \\ \frac{5}{6} & 0 & \frac{1}{6} \\ 0 & \frac{5}{6} & \frac{1}{6} \end{bmatrix}$$

$$M = \begin{matrix} & x & y \\ A & \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \\ B & \end{matrix}$$

1.10 Systems of equation array

$$f(n) = \begin{cases} n/2 & \text{if } n \text{ is even} \\ -(n+1)/2 & \text{if } n \text{ is odd} \end{cases}$$

1.11 Mathematical programming

$$\begin{aligned} \max \quad & z = 4x_1 + 7x_2 \\ \text{s.t.} \quad & 3x_1 + 5x_2 \leq 6 \end{aligned} \tag{4}$$

$$x_1 + 2x_2 \leq 8 \tag{5}$$

$$x_1, x_2 \geq 0$$

1.12 Algorithms

Require:

$\langle \mathcal{S}, \mathcal{A}, T, R \rangle$, an MDP

γ , the discount factor

ϵ , the maximum error allowed in the utility of any state in an iteration

Local variables:

U, U' , vector of utilities for states in \mathcal{S} , initially zero

δ , the maximum change in the utility of any state in an iteration

repeat

$U \leftarrow U'$

$\delta \leftarrow 0$

for all $s \in \mathcal{S}$ do

$U'[s] \leftarrow R[s] + \gamma \max_a \sum_{s'} T(s, a, s') U[s']$

if $|U'[s] - U[s]| > \delta$ **then**

$\delta \leftarrow |U'[s] - U[s]|$

end if

```

    end for
until  $\delta < \epsilon(1 - \gamma)/\gamma$ 
return  $U$ 

```

1.13 Listings

```

1 |#!/usr/bin/env python
2 |# -*- coding: utf-8 -*-
3 |
4 |# Author: Jérémie Decock
5 |
6 |def main():
7 |    """Main function"""
8 |
9 |    print "Hello world!"
10 |
11 |if __name__ == '__main__':
12 |    main()

```

listings/test.py

1.14 Verbatim

```

.--.
|o_o |
|:_/ |
// \ \
(| |)
/'\ _ _/'\
\__)=(___/

# gcc -o hello hello.c

```

1.15 Table

	$\gamma = 1$ (small noise)	$\gamma < 1$ (large noise)
Proved rate for R-EDA	$\frac{1}{\beta} \leq \alpha$	$\frac{1}{2\beta} \leq \alpha$
Former lower bounds	$\alpha \leq 1$	$\alpha \leq 1$
R-EDA experimental rates	$\alpha = \frac{1}{\beta}$	$\alpha = \frac{1}{2\beta}$
Rate by active learning	$\alpha = \frac{1}{2}$	$\alpha = \frac{1}{2}$

1.16 URL

<http://www.jdhp.org/>
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Conclusion

TODO

References

- [1] Richard Ernest Bellman. *Dynamic Programming*. Princeton University Press, Princeton, New Jersey, USA, 1957.



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