# PONTIFICAL CATHOLIC UNIVERSITY OF RIO GRANDE DO SUL FACULTY OF INFORMATICS GRADUATE PROGRAM IN COMPUTER SCIENCE

### YOUR TITLE IN ENGLISH HERE

#### **FULANO DA SILVA**

Thesis presented as partial requirement for obtaining the degree of Ph. D. in Computer Science at Pontifical Catholic University of Rio Grande do Sul.

Advisor: Prof. Beltrano Dias Co-Advisor: Prof. Ciclano de Farias

# REPLACE THIS PAGE WITH THE LIBRARY CATALOG INFORMATION

# REPLACE THIS PAGE WITH THE PRESENTATION TERM

Dedico este trabalho a meus pais.



#### **ACKNOWLEDGMENTS**

 $\grave{\mathsf{A}}$  lorem ipsum, dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor. invidunt ut labore et dolore magna aliquyam

 $\grave{\mathsf{A}}$  erad sed, diam voluptua at vero, eos et accusam et justo duo dolores et ea rebum stet clita.

À kasd gubergren, no sea. takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet. consetetur sadipscing elitr sed

À diam nonumy, eirmod tempor, invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at.

SEU TÍTULO EM PORTUGUÊS AQUI

**RESUMO** 

Seu resumo em português aqui. lorem ipsum dolor sit amet consetetur sadipscing elitr sed

diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita. kasd gubergren no sea takimata

sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua

at.

Palavras Chave: lorem, ipsum, dolor, sit, amet.

#### YOUR TITLE IN ENGLISH HERE

#### **ABSTRACT**

Your abstract in English here. lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at

**Keywords:** lorem, ipsum, dolor, sit, amet.

# LIST OF FIGURES

Figure $1.1 - \text{This}$ is a figure with a very long caption which looks ugly in the corresponding	
list of figures. Fortunately, there is an optional parameter for a shorter replacement	
of this monstrosity	29
Figure 1.2 – A figure with an alternate, shorter caption	30
Figure 2.1 – This is another figure	34

# LIST OF TABLES

Table 2.1 – This is a table	33
Table 2.2 – Note que a legenda da tabela fica na parte de cima	35

# LIST OF ACRONYMS

ABC – Associação Brasileira de Computadores

IJK – lorem ipsum dolor sit

XYZ – lorem ipsum dolor sit

# LIST OF ABBREVIATIONS

Abrev. – Abreviatura

Inform. – Informática

# LIST OF SYMBOLS

Hz – Hertz	29
$\pi$ – Constante com valor aproximado de 3.1415926	29

# **CONTENTS**

1	INTRODUÇÃO	29
1.1	PRIMEIRA SEÇÃO	30
1.1.1	SUBSEÇÃO	30
2	ANOTHER CHAPTER	33
2.1	ANOTHER SECTION	33
2.1.1	ANOTHER SUBSECTION	34
2	REFERENCES	37
	APPENDIX A — Meu primeiro apêndice	39
	APPENDIX B – My second appendix	41
	ATTACHMENT A — Meu primeiro anexo	43
	ATTACHMENT B — My second attachment	45

### 1. INTRODUÇÃO

lorem ipsum dolor sit amet Capítulo 1 consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod. Ver Figura 1.1.

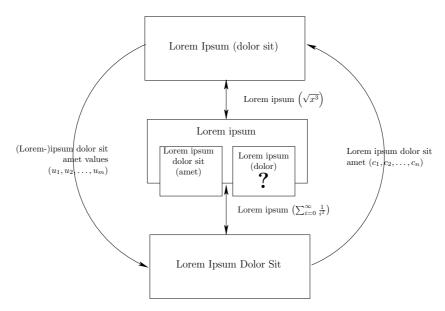


Figure 1.1 -This is a figure with a very long caption which looks ugly in the corresponding list of figures. Fortunately, there is an optional parameter for a shorter replacement of this monstrosity

tempor invidunt [Ski98] ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum [NA07]. O algoritmo na Figura 1.2 mostra este processo.

tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum [CLRS01].

dolor sit [Ben07] amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero [Atk04].

- 1. lorem
- 2. ipsum
- 3. dolor
- 4. sit
- 5. amet
- 6. consetetur

```
1. function \sigma(i, j)
 2. {table lorem ipsum dolor consetetur sadipscing elitr sed (i, j)}
 3. if table[i, j] .memoized then
       return table [i, j] .error
 5. end if
 6. minerror \leftarrow \infty
 7. bestt \leftarrow nil
 8. for each template t in T do
       error \leftarrow allocate(t, i, j)
 9.
10.
       if error < minerror then
11.
          minerror \leftarrow error
12.
          bestt \leftarrow t
       end if
13.
14. end for
15. table[i, j]. memoized \leftarrow true
16. table[i, j].template \leftarrow bestt
17. table[i, j].error \leftarrow minerror
18. return minerror
```

Figure 1.2 -This is another figure with a very long caption. However, this time we will actually use the shorter version.

#### 1.1 Primeira seção

lorem ipsum dolor sit  $x \le 2$  amet consetetur sadipscing elitr sed diam nonumy eirmod Seção 1.1 tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita. [dO08]

$$\int_0^\infty x^2 + \frac{\pi}{\sum_{i=0}^n \frac{1}{i^2}} \tag{1.1}$$

kasd gubergren no sea Equação (1.1) takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod. [PCC $^+$ 11]

amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod. [Pic08]

#### 1.1.1 Subseção

dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero.

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod.

tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero:

- lorem
- ipsum
- dolor
- sit
- amet
- consetetur

#### Subsubsub

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita. [Gol09]

$$L(i, j, w, h) = \begin{cases} E(i, w, h) & i = j \\ \min\left(\min_{k=i}^{j-1} \{ \heartsuit(i, k, j, w, h) \}, \min_{k=i}^{j-1} \{ \spadesuit(i, k, j, w, h) \} \right) & i < j. \end{cases}$$
(1.2)

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet.

De acordo com Fulaninho (2011, p. 19):

ut wisi enim ad minim veniam quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio

duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit

praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi lorem ipsum dolor sit amet consectetuer adipiscing elit sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

ut wisi enim ad minim veniam quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

nam liber tempor cum soluta nobis eleifend option congue nihil imperdiet doming id quod mazim placerat facer possim assum lorem ipsum dolor sit amet consectetuer adipiscing elit sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat ut wisi enim ad minim veniam quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

#### 2. ANOTHER CHAPTER

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt [Pla81] ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum. A Tabela 2.1 mostra o cronograma. [Wik09]

Atividade	Table 2.1 – This is a table  Ano/Semestre			
Atividade	2011/II	2012/I	2012/11	2013/I
1				
2	$\checkmark$	$\checkmark$	$\checkmark$	
3	$\checkmark$	$\checkmark$	$\checkmark$	
4	$\checkmark$	$\checkmark$	$\checkmark$	×
5				
6				
7	×			
8		×		
9		×	×	
10	×	×	×	
11	×	×	×	×

#### 2.1 Another section

Lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem. [Lin05]

Lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo

duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet. Figura 2.1.

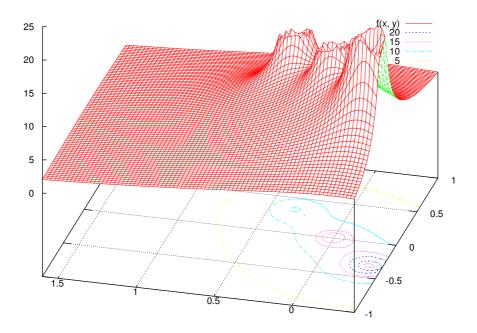


Figure 2.1 – This is another figure

Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi lorem ipsum dolor sit amet consectetuer adipiscing elit sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Ut wisi enim ad minim veniam quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

Nam liber tempor cum soluta nobis eleifend option congue nihil imperdiet doming id quod mazim placerat facer possim assum lorem ipsum dolor sit amet consectetuer adipiscing elit sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat ut wisi enim ad minim veniam quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

#### 2.1.1 Another subsection

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam. [CGMV]

#### Another subsubsection

lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy. A seguir, a Tabela 2.2 mostra algo mais simples.

Table 2.2 – Note que a legenda da tabela fica na parte de cima

lorem	ipsum	dolor
sit	amet	consetetur
sadipscing	elitr	sed
diam	nonumy	eirmod
tempor	invidunt	ut
labore	et	dolore
magna	aliquyam	erat
sed	diam	voluptua
at	vero	eos

Lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at.

Lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at vero eos et accusam et justo duo dolores et ea rebum stet clita kasd gubergren no sea takimata sanctus est lorem ipsum dolor sit amet lorem ipsum dolor sit amet consetetur sadipscing elitr sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat sed diam voluptua at.

#### **BIBLIOGRAPHY**

- [Atk04] Atkins, B. C. "Adaptive photo collection page layout". In: International Conference on Image Processing, 2004, pp. 2897–2900.
- [Ben07] Bentley, J. "The most beautiful code I never wrote". In: Beautiful Code: Leading Programmers Explain How They Think, Oram, A.; Wilson, G. (Editors), Sebastopol, CA: O'Reilly & Associates, Inc., 2007, chap. 3, pp. 29–40.
- [CGMV] Coffman, E.; Galambos, J.; Martello, S.; Vigo, D. "Bin packing approximation algorithms: Combinatorial analysis". Capturado em: http://citeseer.ist.psu.edu/coffman98bin.html, Dez 2007.
- [CLRS01] Cormen, T. H.; Leiserson, C. E.; Rivest, R. L.; Stein, C. "Introduction to Algorithms, Second Edition". Cambridge, MA: The MIT Press, 2001, 1184p.
- [dO08] de Oliveira, J. B. S. "Two algorithms for automatic document page layout". In: Proceedings of the eighth ACM symposium on Document engineering, 2008, pp. 141–149.
- [Gol09] Goldenberg, E. "Automatic layout of variable-content print data", Master's Thesis, School of Cognitive & Computing Sciences, University of Sussex, Brighton, UK, 2009, 41p.
- [Lin05] Lin, X. "Active layout engine: Algorithms and applications in variable data printing", Technical Report, Hewlett & Packard Laboratories, Palo Alto, CA, USA, 2005, 33p.
- [NA07] Nagamochi, H.; Abe, Y. "An approximation algorithm for dissecting a rectangle into rectangles with specified areas", *Discrete Appl. Math.*, vol. 155–4, 2007, pp. 523–537.
- [PCC+11] Piccoli, R. F. B.; Chamun, R.; Cogo, N. C.; de Oliveira, J. B. S.; Manssour, I. H. "A novel physics-based interaction model for free document layout". In: Proceedings of the 11th ACM symposium on Document engineering, 2011, pp. 153–162.
- [Pic08] Piccoli, R. F. B. "Um algoritmo determinístico para adaptação automática de documentos de conteúdo variável", Master's Thesis, Faculdade de Informática PUCRS, Porto Alegre, RS, Brasil, 2008, 104p.
- [Pla81] Plass, M. F. "Optimal pagination techniques for automatic typesetting systems", Ph.D. Thesis, Stanford University, Stanford, CA, USA, 1981, 80p.
- [Ski98] Skiena, S. S. "The algorithm design manual". New York, NY, USA: Springer-Verlag New York, Inc., 1998, chap. 6, pp. 139–161.
- [Wik09] Wikipedia. "Wikipedia:featured pictures Wikipedia, the free encyclopedia". Capturado em: http://en.wikipedia.org/wiki/Featured\_pictures, Nov 2009.

# APPENDIX A – MEU PRIMEIRO APÊNDICE

# APPENDIX B – MY SECOND APPENDIX

# ATTACHMENT A – Meu primeiro anexo

# $\label{eq:attachment} \textbf{ATTACHMENT} \ \ \textbf{B} - \textbf{My second attachment}$