UNIVERSITY OF LILLE 1
DOCTORAL SCHOOL OF ENGINEERING SCHOOL

P H D T H E S I S

to obtain the title of

PhD of Science

of the University of Lille 1
Specialty: Computer Science

Defended by

Olivier Comas

Real-time soft tissue modelling on GPU for medical simulation

Thesis Advisor: Stéphane Cotin

prepared at
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Acknowledgments

Thanks blablabla.

Real-time soft tissue modelling on GPU for medical simulation

Abstract: Blablabla bla blabla blablablabla, blablablablabla bla blabla bla blablablabla bla. Blablabla bla blabla blablablabla, blablablablabla bla blabla bla blablablabla bla.
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Keywords: Medical simulation, soft tissue modelling, finite element method, GPU

Résumé

Simulation de tissus mous en temps réel sur GPU pour la simulation médicale

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Contents

Chapter 1

Introduction

A short abstract for the upcoming chapter

1.1 Illustration Example

1.1.1 A subsection just for fun

Sorry I won't write your PhD here ;) This small text just to mention that this style supports writing with accents such as in french words (thse, dfinir, ...). Also I put here a simple way to include an image. This is standard latex. For pdflatex compilation, the extension of the images is jpg. For latex compilation, this is ps or eps. The base folder containing images is set in formatAndDefs.tex, as well as the default extensions added to the image names.

Figure 1.1: A nice image...

1.2 An equation

Just to show argmin and partial derivative commands. First, we want to obtain a registration method which is as independent as possible w.r.t. the setting of its parameters. This setting, done by the clinician, indeed needs to be minimal while guaranteeing a robust result. We therefore propose registration methods allowing to better control the obtained transformation, using outlier rejection techniques or locally affine transformations.First, we want to

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$$\frac{\partial T}{\partial t} = \Delta T \tag{1.1}$$

1.3 An other section

Showing a great bullet list environme

Chapter 2

My first real chapter

A short abstract for the upcoming chapter

2.1 Illustration Example

2.1.1 A subsection just for fun

Sorry I won't write your PhD here ;) This small text just to mention that this style supports writing with accents such as in french words (thse, dfinir, ...). Also I put here a simple way to include an image. This is standard latex. For pdflatex compilation, the extension of the images is jpg. For latex compilation, this is ps or eps. The base folder containing images is set in formatAndDefs.tex, as well as the default extensions added to the image names.

2.2 An equation

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tration methods allowing to better control the obtained transformation, using outlier rejection techniques or locally affine transformations. Regularization:

$$\frac{\partial T}{\partial t} = \Delta T \tag{2.1}$$

2.3 An other section

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Appendix A

Appendix Example

A.1 Appendix example section

And I cite myself to show by bibtex style file (two authors) (Commowick and Malandain, 2007).

This for other bibtex stye file : only one author Oakes (1999) and many authors Guimond et al. (2000).

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[Commowick and Malandain, 2007] O. Commowick and G. Malandain. *Efficient Selection of the Most Similar Image in a Database for Critical Structures Segmentation*. In *Proceedings of the 10th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention - MICCAI 2007, Part II*, vol. 4792 of *LNCS*, pages 203–210, Springer Verlag, 2007.

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[Oakes, 1999] D. Oakes. *Direct Calculation of the Information Matrix via the EM Algorithm*. J. R. Statistical Society, vol. 61, no. 2, pages 479–482, 1999.

List of Abbreviations

PhD Doctor of Philosophy