

#### Title of the document

by

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A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Department of Mathematics and Statistics Memorial University

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## Abstract

This is the abstract. It should not exceed 300 words.

To whom you what to dedicate this work

### Lay summary

Lay summary is a short account of research targeted at a general audience, i.e., its goal is to communicate the research results to a non-specialist readership. It should fit in one page.

A lay summary provides a brief description of the research in a less technical language. It should include 1) background of the study, 2) rationale and methods, and 3) outcomes.

The following guidelines are recommended.

a) Write it in every day English, using shot and clear sentences.

b) The text should be ordered logically and flow naturally, i.e., ideas and concepts should introduced as needed.

c) Everything here should be expressed in active voice. Preferentially, in first person.

d) Positive phrasing.

- e) Aims, objectives and results should be clearly stated.
- f) Whenever possible, provide every day examples.
- g) Use the appropriate tone. This summary's goal is to inform not to entertain.

### Acknowledgements

Among other acknowledgements, the student should declare the extent to which assistance (paid or unpaid) has been given by faculty and staff members, fellow students, research assistants, technicians, or others in the preparation of the thesis (including editorial help).

In addition, it is appropriate to recognize the supervision and advice given by the thesis supervisor(s), supervisory committee members and other advisors.

### Statement of contribution

There must be an explicit statement describing the contributions of all parties, including the student and supervisor(s).

Doctoral thesis must also include a statement clearly indicating those elements of the thesis that are considered original scholarship and distinct contributions to knowledge.

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## List of symbols

 $N(\mu, \sigma^2)$  normal distribution with mean  $\mu$  and variance  $\sigma^2$ R real numbers

### List of abbreviations

- ISO International Organization for Standardization
- PDF Portable Document Format

#### PDF/A ISO-standardized version of PDF specialized for digital archiving.

Chapter 1

Title of chapter one

Chapter 2

Title of chapter two

# Appendix A

# Title of appendix A

# Appendix B

# Title of appendix B