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THÈSE PRÉSENTÉE

POUR OBTENIR LE GRADE DE

DOCTEUR
DE L'UNIVERSITÉ DE BORDEAUX

ECOLE DOCTORALE SCIENCES ET ENVIRONNEMENTS

ECOLOGIE ÉVOLUTIVE, FONCTIONNELLE ET DES COMMUNAUTÉS

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Confined Brownian Motion

Sous la direction de : **Thomas Salez**
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Soutenue le 25 décembre 2019

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Abstract

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ANN Artificial Neural Network

1 Introduction

"And now here is my secret, a very simple secret: It is only with the heart that one can see rightly; what is essential is invisible to the eye."[1]

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[1] The Little Prince (2018). Personal communication.

2 Chapter1

Some references using LaTeX

de1998little

de1998little

(**de1998little**)

(**de1998little**)

(**de1998little**; **bieger2013**)

(**de1998little**; **bieger2013**)

(**de1998little**)

How to use Glossary/Abbreviaion function

Artificial Neural Networks (ANN), as the name already reveals, are computational networks that are able to solve complex, nonlinear mathematical problems.

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2.1 Equations

$$\mathrm{C}(S,t) = \mathrm{N}(\mathrm{d}_1)\mathrm{S} - \mathrm{N}(\mathrm{d}_2)\mathrm{K}\mathrm{e}^{-rt} \tag{2.1.1}$$

$$\mathrm{d}_2 = \mathrm{d}_1 - \sigma\sqrt{\mathrm{t}} \tag{2.1.2}$$

3 Chapter2

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Figure 1: *The little prince on planet b612*

A Appendix

A.1 Sample Longtable Format

ID	Source	Authors	Year	Title
001	arXiv.org	Bornas and Mateos	2019	A Character-Level Approach to the Text Normalization Problem Based on a New Causal Encoder
002	arXiv.org	Kalyan and Sangeetha	2019	SECNLP: A Survey of Embeddings in Clinical Natural Language Processing
003	arXiv.org	Zhang et al.	2019	Multiresolution Graph Attention Networks for Relevance Matching
004	arXiv.org	Monti et al.	2019	Fake News Detection on Social Media using Geometric Deep Learning
005	arXiv.org	Si et al.	2019	Enhancing Clinical Concept Extraction with Contextual Embedding
006	arXiv.org	Vo et al.	2019	Combination of Domain Knowledge and Deep Learning for Sentiment Analysis of Short and Informal Messages on Social Media
007	arXiv.org	Vidya et al.	2019	A Deep Learning Approach for Similar Languages, Varieties and Dialects
008	arXiv.org	Eger et al.	2019	Is it Time to Swish? Comparing Deep Learning Activation Functions Across NLP tasks
009	arXiv.org	Wolk et al.	2019	Deep learning and sub-word-unit approach in written art generation.

Table A.1: *Complete table of samples obtained from cross-references. (own table)*