ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
UNIVERSITY OF CRETE

Microbial communities through the lens of data integration, knowledge aggregation and metabolic networks analysis

Haris Zafeiropoulos

Dissertation presented in partial fulfillment of the requirements for the degree of Doctor of Science (PhD) in Biology

Promotors:

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Members of the examination committee and reading committee

Preface

I would like to thank everybody who kept me busy the last year, especially my promoter and my assistants. I would also like to thank the jury for reading the text. My sincere gratitude also goes to my wive and the rest of my family.

Haris Zafeiropoulos

Contents

Abstract

The `abstract` environment contains a more extensive overview of the work. But it should be limited to one page.

Περίληψη

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Abbreviations

LoG	Laplacian-of-Gaussian
MSE	Mean Square error
PSNR	Peak Signal-to-Noise ratio

Symbols

42	"The Answer to the Ultimate Question of Life, the Universe, and Everything" according to [1]
c	Speed of light
E	Energy
m	Mass
π	The number pi

Chapter 1

Introduction

The first contains a general introduction to the work. The goals are defined and the modus operandi is explained.

1.1 Here's a section

1.2 Here s another section

Chapter 2

Microbial diversity: the *who*

A chapter is a logical unit. It normally starts with an introduction, which you are reading now. The last topic of the chapter holds the conclusion.

2.1 A First Topic

First comes the introduction to this topic.

2.1.1 An item

2.2 A Second Topic

2.2.1 Another item

2.3 Conclusion

The final section of the chapter gives an overview of the important results of this chapter. This implies that the introductory chapter and the concluding chapter don't need a conclusion.

Chapter 3

Metabolic networks

3.1 The First Topic of this Chapter

3.1.1 Item 1

The relationship between genotype and phenotype is fundamental to biology. Many levels of control are introduced when moving from one to the other. Systems biology aims at deciphering "the strategy" both at the cell and at higher levels of organization, in case of multicell species, that enables organisms to produce orderly adaptive behavior in the face of widely varying genetic and environmental conditions ([3]); the term "strategy" is used as per [2]. Systems biology approaches aim at interpreting how a system's properties emerge; from the cell to the community level.

3.1.2 Item 2

3.2 The Second Topic

3.3 Conclusion

Chapter 4

Conclusion

The final chapter contains the overall conclusion. It also contains suggestions for future work and industrial applications.

Appendices

Bibliography

[1] D. Adams. *The Hitchhiker's Guide to the Galaxy*. Del Rey (reprint), 1995. ISBN-13: 978-0345391803.

[2] M. Polanyi. Life's irreducible structure: Live mechanisms and information in dna are boundary conditions with a sequence of boundaries above them. *Science*, 160(3834):1308–1312, 1968.

[3] R. Strohman. Maneuvering in the complex path from genotype to phenotype. *Science*, 296(5568):701–703, 2002.

PhD disseration

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Titen: Microbial communities through the lens of data integration, knowledge aggregation and metabolic networks analysis

UDC: 621.3

Korte inhoud:

Hier komt een heel bondig abstract van hooguit 500 woorden. LaTeX commando's mogen hier gebruikt worden. Blanco lijnen (of het commando `\par`) zijn wel niet toegelaten!

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