UM PhD Thesis Format

by

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Doctor of Philosophy in Electrical and Computer Engineering

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Computationally-Efficient Keywords Spotting Systems in Nanoscale CMOS

by

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Acknowledgements

Thank you.

Fei Tan

April 2024

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Abstract

Put your abstract here.

Declaration

I declare that the thesis here submitted is original except for the source materials explicitly acknowledged and that this thesis as a whole, or any part of this thesis has not been previously submitted for the same degree or for a different degree.

I also acknowledge that I have read and understood the Rules on Handling Student Academic Dishonesty and the Regulations of the Student Discipline of the University of Macau.

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List of Abbreviations

UM University of Macau

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Introduction

1.1 University of Macau

University of Macau (UM)

1.2 Edge-Computing KWS Systems Design Challenges and Future Prospects

1.3 Reaserch Objectives

1.4 Research Contribution and Publications

The author declares that the thesis was based on the research works undertaken in the Department of Electronic and Computer Engineering, Faculty of Science and Technology, State Key Laboratory of Analog and Mixed-Signal VLSI, University of Macau.

Main Contributions

Chapter 2:

Chapter 3:

Chapter 4:

Journal Papers

Conference Paper

1.5 Thesis Organization

Chapter 2

Toward Edge-Computing KWS - Algorithms and Hardware Techniques Review and Case study

2.1 Introduction

This is the citation format [2.1].

2.2 Algorithms for Edge-Computing KWS

2.3 Hardware Techniques for Edge-Computing KWS

2.4 Case Study

References

[2.1] D. De Venuto, D. Castro, Y. Ponomarev, and E. Stikvoort, “0.8 μw 12-bit sar adc sensors interface for rfid applications,” *Microelectronics Journal*, vol. 41, pp. 746–751, 11 2010.

Chapter 3

An Ultra-Low-Leakage and Low-Latency KWS System

3.1 Introduction

3.2 Proposed KWS Chip

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Chapter 4

Ultra-Low FAR KWS System

4.1 Introduction

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4.3 Circuit Details

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Chapter 5

Conclusions and Future Work

5.1 Summary and Conclusions

The key points of each chapter are summarized as follows:

Chapter 1 introduces the background and organization of this thesis.

Chapter 2

Chapter 3

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Chapter 5

5.2 Recommedations for Future Work