

Sound Detection and Classification

using Spiking Neural Networks

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Outline

- 1 Introduction
- 2 Dow
 - Context : Data and objectives
 - Technical Approach and SOTA
 - Theoretical part
- 3 Pre-processing
 - Data collection
 - Data augmentation
- 4 Spectrograms, MEL and MFCC
 - Spectrograms
 - MEL
 - MFCC
- 5 Spiking Neural Networks - First results
- 6 Conclusion

Introduction

- Presentation of the Project
- Sound Detection and Classification
- Spiking Neural Networks

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- Spectrograms
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Data

- Type of Data
- Goal to achieve with this data

Technical Approach

- State of the art
- Technical Approach

Theoretical part

- Spiking Neural Networks
- Sound Detection and Classification

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Pre-processing

- Collecting the data
- Adaptation of the data
- Checking that there are no errors / repetitions

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Spectrograms

- Spectrograms

MEL

- MEL

MFCC

- MFCC

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Spiking Neural Networks - First results

- First results

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Conclusion

- Summary
- Future Work