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**Department of Information Engineering and Computer Science**

Bachelor’s Degree in

Computer Science

Development of a GUI for the

Packet Loss Concealment

Testbench Tool

|  |  |
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To my wife and to my daughters

who constantly supported my through this journey

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# Abstract

# Introduction

## Purpose

## Domain (Real-time streaming of audio data excluding speech)

# Literature Review

## Digital Audio Fundamentals

### What is a Sound Wave?

### How can it be represented in a digital format?

### How can the information be stored?

## Packet Loss

### Packet Loss

### Packet Loss Simulation

### Packet Loss Concealment

#### Packet Loss Algorithms

# Methods

## Adapted languages: Python and Javascript

## Project architecture

## Web GUI

## UI main functions

### Configuration of the input data

### Execution management monitoring

### Output analysis

## Technical choices (Frameworks)

## Application Containerization for scalabilty

# Results

## Validation of PLC-TestBench tool

## Extension of the tool usability

## User experience

# Discussion

## Future Developments

# Conclusion

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