

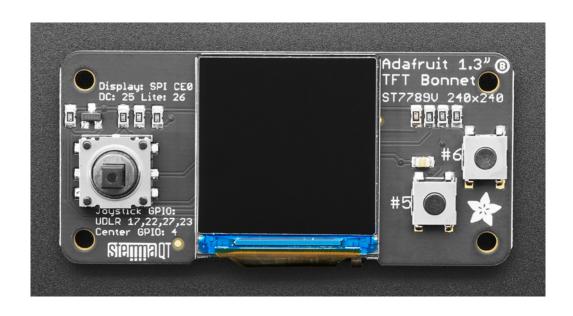


#### ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

#### Semester Project

DOOM in HEEP: Implementation of the classic DOOM game on a fully in-house ASIC

By Ismael Tobias Frei



THESIS ADVISOR:
Prof. David Atienza

Thesis Supervisors: Dr. Jose Miranda and Dr. Miguel Peon Quiros STI IEL ESL ELG 130 (Bâtiment ELG) Station 11 CH-1015 Lausanne June 15, 2024

### Acknowledgments

#### Abstract

### Contents

# Chapter 1 Introduction

### Chapter 2

### X-HEEP and HEEPocrates

# Chapter 3 DOOM on embedded systems

### Chapter 4

### Display and Joystick

All the inputs and outputs are through the Adafruit 1.3" Color TFT Bonnet for Raspberry Pi [1].

# Chapter 5 Porting DOOM on X-HEEP

# Chapter 6 Future Work

## Chapter 7

### Conclusion

### Bibliography

[1] Adafruit.~2024.~URL:~https://learn.adafruit.com/adafruit-1-3-color-tft-bonnet-for-raspberry-pi.