

Multi-Input Functional Encryption and Obfuscation

A Thesis
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Sage R. Michaels

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Dylan McNamee

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Abstract

This is an example of a thesis setup to use the reed thesis document class.

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Introduction

Chapter 1

Motivation

This chapter is intended to serve as a brief overview of what is covered in the following thesis for readers with no background in Mathematics or Computer Science.

1.1 Classical Encryption

1.2 Circuits

1.3 Secure Computation

Chapter 2

Background

2.1 Functional Encryption

2.2 Black Box Obfuscation

2.3 Diffie-Hellman Key Exchange

Chapter 3

Multi-Linear Maps

3.1 Definition

3.2 Intuition

3.3 Construction Outline

3.4 Candidate Groups/Quotient Rings/Fields

Chapter 4

Indistinguishability Obfuscation

4.1 Definition

4.2 Construction

4.3 Usage, Limitations, and Goals

Chapter 5

Multi-Party Input Functional Encryption

5.1 Scheme

5.2 Construction

5.3 Limitations and Goals

Chapter 6

A Brief Introduction to the 5-GenC library

6.1 The DSL

6.2 Circuits and Branching Programs

6.3 Base and MMaps

Chapter 7

Experiments

7.1 Comparison Circuit

7.2 Runtime Evaluation

Chapter 8

Conclusion

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