#### **GUARANTEED MONTE CARLO METHODS**

# BY

#### LAN JIANG

Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Applied Mathematics in the Graduate College of the Illinois Institute of Technology

Approved		
	Advisor	

Chicago, Illinois May 2015

#### ACKNOWLEDGMENT

This dissertation could not have been written without Dr. Fred J. Hickernell who not only served as my supervisor but also encouraged and challenged me throughout my academic program. He and the other faculty members, Dr. Greg Fasshauer, Dr. Lulu Kang, guided me through the dissertation process, never accepting less than my best efforts. I appreciate the joint work with Dr. Art Owen. I would also like to thank my husband Xuan Zhou, for his support. I thank them all.

### TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	iii
LIST OF TABLES	v
LIST OF FIGURES	vi
ABSTRACT	vii
CHAPTER	
1. INTRODUCTION	1

#### LIST OF TABLES

Table	Page
-------	------

## LIST OF FIGURES

Figure

### ABSTRACT

# CHAPTER 1 INTRODUCTION