

CAMBRIDGE UNIVERSITY ENGINEERING

DEPARTMENT

Part IIA Full Technical Report

3F3 Random Number Generation

Name: Yongqing Jiang

CRSid: yj375

College: Peterhouse

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1 Introduction

This lab activity investigates statistical methods by generating random numbers with underlying distribution. Uniform and normal random variables are generated, and they are visualized by histogram and kernel density function. Functions of random variables are also discussed. Inverse CDF method is used to generate random variables from any arbitrary distributions. Finally, α -stable distribution is discussed.

2 Methods, Results, and Discussion

2.1 Uniform and normal random variables

2.1.1 Histogram and kernel density function

2.1.2 Multinomial distribution

3 Conclusion