Contents

Contents vii

List of Figures ix

1 Introduction 1

1.1 What is a Dialect 1

1.2 Dialect Variations in Assamese Language 2

1.2.1 kAmrUpI dialect(কামৰূপী উপভাষা): 2

1.2.2 gowAlaparIyA dialect(গোৱালপৰীয়া উপভাষা) 4

2 About Speech 7

2.1 Introduction 7

2.2 Digital speech processing 7

2.3 Acoustic theory of speech 8

2.4 Prosodic features of speech 9

2.5 Speech Synthesis 9

2.6 Problem Definition 10

3 Dialectical Features in Speech 11

3.1 Prosody Features 11

3.1.1 Pitch and Formant 11

3.2 Related Work 12

3.2.1 Dialectical Features Identification 12

3.2.2 Synthesis of Speech 13

4 Implementation 14

4.1 Introduction 14

4.2 Analysis of Speech 14

4.2.1 Pitch Analysis 14

4.2.2 Formant Analysis 16

4.3 Speech Synthesis 16
4.3.1 Articulatory Synthesis 16
4.3.2 Formant Synthesis 17
4.4 Experiment 19

5 Conclusion and Future Work **22**
5.1 Conclusion 22
5.2 Future Work 22

Bibliography **24**

List of Figures

1.1 Various types of Assamese Dialects 2
1.2 Various types of gowAlaparlyA Dialects 4

2.1 Schematic view of the human vocal mechanism 8
2.2 A source-filter model of speech production 9

4.1 Experimental values of Pitch for Assamese vowels 15
4.2 Experimental values of formant for Assamese vowels 16
4.3 Schematic diagram of a KlattGrid / Klatt synthesizer with the vocal tract part realized as filters in cascade 18
4.4 An interface of KlattGrid Simulator 20