**Statistical**

**Optimization**

**in**



**Speech**

**Recognition**

**Joseph Picone**

**Statistical Optimization**

**in Speech Recognition**

Joseph Picone

Modern speech recognition systems are testaments to advances in machine learning as they optimize every aspect of the system using statistically-based learning algorithms. Optimization has allowed this technology to achieve unprecedented levels of performance. This book presents a unified view of this optimization, focusing on such techniques as expectation-maximization, hidden Markov modeling and discriminative training. Theory is presented in a clear and straightforward manner, so readers can easily access and apply the material.

Joseph Picone has conducted research in the field of speech processing for more than 25 years in the industrial, academic and government sectors. He founded the Institute for Signal and Information Processing which is well-known for producing public domain speech and signal processing technology and providing innovative solutions over the Internet.

Statistical Optimization in
Speech Recognition

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J. Picone, *Perspectives on Engineering Management*, 2010

**Statistical Optimization in** Joseph Picone

**Speech Recognition**

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**DEDICATION**

To Mary Ann, Mary Frances, and Ann Marie, for their love and sacrifices that allowed me to spend many years away from home chasing dreams

To Rafid, Paul, Jon, Aravind, and many other ISIP members who inspired and contributed to this work, and continue to motivate me to chase my dreams

To Demetrius, Walt, Joe, George, Raja, Jack, Barb, Joe, Mark and many other colleagues who helped me turn some of those dreams into reality

And to Jack for challenging me to dream about speech processing over a frozen cup of coffee in the middle of a cold Chicago winter many, many years ago…

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1. Preface

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1. Introduction

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* 1. First Subsection

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* 1. Second Subsection

This is a test.

* 1. Third Subsection

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