

University of London
Imperial College of Science, Technology and Medicine
Department of Computing

Title of my Ph.D. Thesis

Joe Bloggs

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Abstract

Text of the Abstract.

Acknowledgements

I would like to express (whatever feelings I have) to:

- My supervisor
- My second supervisor
- Other researchers
- My family and friends

Dedication

Dedication here.

‘Quote text here.’

Guy Quoted

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Chapter 1

Introduction

1.1 Motivation and Objectives

Motivation and Objectives here.

1.2 Literature Reviews

1.2.1 The Early Work towards Ear Forensics by Iannarelli

In 1949, Alfred Iannarelli was well-known in American as an ear identification expert who provided ear evidence as a strong personal identification in the context of forensic science[1]. He also developed a measurement system in order to represent the ear by numbers, which was used by American law enforcement agencies at that time[2]. As shown in Figure 1.1, he aligned the ear into 4 reference lines which divided the image into equally 45° intervals. The intersection of those lines is located on the tragus and the crus of helix (see section 4.1 for a description of the anatomical parts of the ear), therefore the ear image can be represented based on the edge markers of each reference line. According to Iannarelli's book,

Need change the references

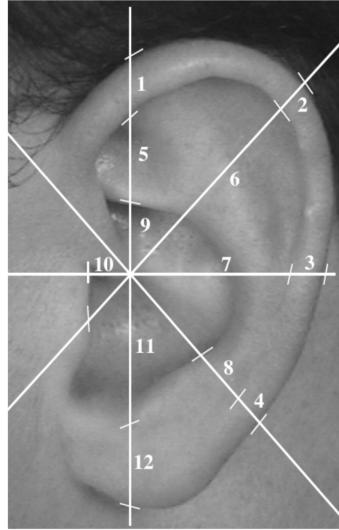


Figure 1.1: Iannarellis manual ear measurement system.

through 38 years of research and application in earology on more than 10,000 ear images, no two ears were found to be identical, not even the two ears from the same person[2].

Although this system was based on a man-power visual measurement which may be not very accurate, the usage time of the successful application has proved itself to be very useful. It also inspired a lot of researches towards ear recognition using more advanced technology later.

1.2.2 Burge and Burgers' method

In the early time of the 21st Century, Burge and Burger started to use machine vision for ear recognition system. They were the first who managed to use machine model each individual ear with an adjacency graph.

Maybe more conclusion

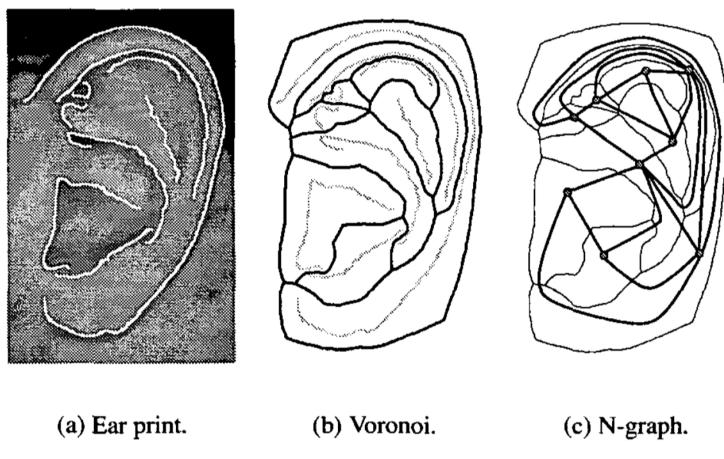


Figure 1.2: Burge and Burgers' ear model method.

Chapter 2

Background Theory

2.1 Introduction

Text of the Background.

Chapter 3

Conclusion

3.1 Summary of Thesis Achievements

Summary.

3.2 Applications

Applications.

3.3 Future Work

Future Work.

Bibliography

- [1] S. v. David Wayne Kunze, Court of Appeals of Washington, Division 2. 97 Wash. App. 832, 988 P.2d 977, 1999.
- [2] B. Arbab-Zavar, “On guided model-based analysis for ear biometrics,” Ph.D. dissertation, School of Electronics and Computer Science, University of Southampton, 2009.