

# 慣用語句中其情感狀態辨識之研究

詹証皓<sup>1\*</sup> 季永炤<sup>2</sup>

<sup>1\*</sup>國立虎尾科技大學自動化工程所碩士生

<sup>2</sup>國立虎尾科技大學自動化工程系副教授

## 摘 要

本文探討以一般對話之語句其語音中所帶有之情緒特徵之分類與擷取並進而辨識出其情感狀態類別。情感的表達和理解是人類俱有之社交能力，人們能夠由對情緒之認知而產生適當之互動。情緒之表達不僅使用語意來表達情緒亦藉重言語之語氣加以強調或隱喻，將此功能應用於社交機器人之情感辨識系統，則有助於增進其社交能力。透過機器人之聽覺系統所擷取到的語句，本文對語句中之三種特徵：音強、音高、與音長而過濾產生出情緒特徵，並經由隱藏式馬可夫模型來辨識情感的狀態與類別。

本研究以 LabVIEW 建立對語音情緒特徵與馬可夫推論之演算模型，並對多種不同情感狀態之語句進行測試，以驗證本研究提出之情緒特徵其對情感狀態辨識的有效性。

**關鍵詞：**語氣分析、隱藏式馬可夫模型、情感狀態。

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\*聯繫作者：國立虎尾科技大學自動化工程系，雲林縣虎尾鎮文化路 64 號。

Tel: +886-936775565

Fax: +886-5-6314486

E-mail: 10357110@gm.nfu.edu.tw

# **A study of The Identification of the Emotional State in the Voice Sentence**

**Zheng-Hao Zhan<sup>1\*</sup>    Yeung-Jaw Jih<sup>2</sup>**

<sup>1\*</sup>Graduate Student, Department of Automation Engineering, National Formosa University

<sup>2</sup>Associate Professor, Department of Automation Engineering, National Formosa University

## **Abstract**

This paper discusses how to extract the emotional features with in the sound voice with internal mood. The ability to analyze and recognize the mood of others is essential for social behavior activity among human and/or robot. In this paper, the mood is classified into several categories. The features extracted from the emotional voice of the robot are used to deduce the characteristics of certain mood category it belongs to. Based on three distinct voice characteristic related to the emotion state; intensity, pitch, and duration, the Hidden Markov Model inference is used to identify the mood of robot through the speaking voice it generated. In this paper, the algorithm for voice and emotional feature filtering and extraction of Markov inference is established with the LabVIEW, and a variety sound voice of different emotional states are tested to verify the validity of the ability of identifying mood condition out of sound voice samples.

**Key words: Tone analysis, Hidden Markov model, Emotional state**

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\*Corresponding author : Department of Automation Engineering, National Formosa University, 64, Wen-Hua Road, Hu Wei, Yun Lin, 63208, Taiwan.

Tel: +886-9-36775565

Fax: +886-5-6314486 E-mail: 10357110@gm.nfu.edu.tw