Exploiting the Context of Personality in Computational Deception Detection

Introduction

Understanding when someone is lying or being deceptive is a challenging task. Traditional methods have involved the use of invasive methods such as polygraph testing, conducted in an intimidating interrogation-style scenarios. However, lying is part of every day life. We lie to spare someone's feelings, often as a way of maintaining a friendship.

Recent research on using non-intrusive techniques to analyse deception have harvested audio-visual data from users of Mechanical Turk from around the world, who were asked to lie about a person they know. Current experiments have been limited to the audio and linguistic content of the data.

Detecting deception robustly is not an easy task because how different people lie is very person dependent. The theory states that lying exerts a greater cognitive load on the brain because it maintains both the information about the truth as well as the lie at the same time. The increased cognitive load affects someone's behaviour, leading to differences between their deceptive and non-deceptive selves.

Thesis Research Questions

Measuring these differences is challenging because sometimes there is simply not enough deceptive data. To measure changes, how do we model someone's 'normal' behaviour? Moreover, could we generate a person-independent model of 'normal' behaviour to improve automated estimates of deception in a person-indepent way? Specifically, could we exploit a person's personality to generate person-independent models of deception?

In this project, the hypothesis is that exploiting the context of personality estimated from the audio, visual, and linguistic content could help to establish a better model for person-independent deception detection.

Experience with international collaborators

This thesis project will also include the opportunity to collaborate with researchers from the Language and Information Technologies group (http://lit.csci.unt.edu/), led by Dr. Rada Mihalcea at the University of Northern Texas, who carried out the initial research using the audio and linguistic content of the data.

More Information

For more information, please email Hayley Hung: h.hung@tudelft.nl