

EACL 2012

**13th Conference of the European Chapter of the
Association for Computational Linguistics**

**Proceedings of the Workshop on
Computational Approaches to Deception Detection**

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Introduction

Welcome to the EACL-2012 Workshop on Computational Approaches to Deception Detection. In organizing the workshop, we hope that it will allow us to review the foundations of this relatively new subfield with computational linguistics and encourage more work in the area.

For much of the twentieth century, the fields of psychology and criminal justice have studied the behaviors that might be associated, directly or indirectly, with deception. Three types of behavior have been examined: facial expressions and body movements; vocal behaviors, including prosodic features; and verbal behaviors, including the words and structures that might correlate with deception.

Now is a good time to review the NLP approaches that have been tried, and to consider the foundations and trends, both theoretical and applied, that will enable us to move forward productively. Several areas of natural language processing are ripe to address the vocal and verbal features that might be associated with deception and new approaches may well combine information from all three modalities. A spate of recent NLP papers on the classification of narratives as truthful or deceptive suggests that the field is ready to open up to this promising area. We see some trends in deception research, expressed in the current collection of papers by descriptions of stylometric techniques, sensor technologies, machine learning approaches and models of data collection and processing.

We are pleased at the interest in the workshop represented by the 14 high quality submissions we received. The committee accepted 9 as papers, 3 as posters, and two as demos. Among these are papers that will help us define the parameters of the field, build collections to test approaches, and create novel applications. We are especially pleased by the presence of cross-linguistic studies and the prospect of future work that extends deception research to a range of cross-cultural and cross-linguistic contexts.

We would like to thank EACL for its endorsement of the workshop. We would also like to thank the EACL workshop co-chairs, Kristiina Jokinen and Alessandro Moschitti, for their support. Most of all, we would like to thank our enthusiastic program committee members for their timely and thoughtful review comments. Without them, this workshop on Computational Approaches to Deception Detection could not be implemented successfully.

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Tommaso Fornaciari, University of Trento

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Douglas Twitchell, Illinois State University
Scott Weems, Center for Advanced Study of Language, University of Maryland

Invited Speaker:

Daniel Baxter, U.S. Department of Defense

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Workshop Program

Monday, April 23, 2012

Session W3: (9:00) Session 1

Linguistic Cues to Deception Assessed by Computer Programs: A Meta-Analysis

Valerie Hauch, Iris Blandón-Gitlin, Jaume Masip and Siegfried Ludwig Sporer

“I Don’t Know Where He is Not”: Does Deception Research yet Offer a Basis for Deception Detectives?

Anna Vartapetian and Lee Gillam

Seeing through Deception: A Computational Approach to Deceit Detection in Written Communication

Ángela Almela, Rafael Valencia-García and Pascual Cantos

Session W3: (11:00) Session 2

In Search of a Gold Standard in Studies of Deception

Stephanie Gokhman, Jeff Hancock, Poornima Prabhu, Myle Ott and Claire Cardie

Building a Data Collection for Deception Research

Eileen Fitzpatrick and Joan Bachenko

On the Use of Homogenous Sets of Subjects in Deceptive Language Analysis

Tommaso Fornaciari and Massimo Poesio

Session W3: (14:00) Session 3

Invited Talk: Current and Future Needs for Deception Detection in a Government Screening Environment

Daniel Baxter

The Voice and Eye Gaze Behavior of an Imposter: Automated Interviewing and Detection for Rapid Screening at the Border

Aaron Elkins, Douglas Derrick and Monica Gariup

Monday, April 23, 2012 (continued)

Session W3: (15:30) Session 4: Posters

Let's Lie Together: Co-Presence Effects on Children's Deceptive Skills

Marc Swerts

Argument Formation in the Reasoning Process: Toward a Generic Model of Deception Detection

Deqing Li and Eugene Santos

Pastiche Detection Based on Stopword Rankings. Exposing Impersonators of a Romanian Writer

Liviu P. Dinu, Vlad Niculae and Maria-Octavia Sulea

Making the Subjective Objective? Computer-Assisted Quantification of Qualitative Content Cues to Deception

Siegfried Ludwig Sporer

Modelling Fixated Discourse in Chats with Cyberpedophiles

Dasha Bogdanova, Paolo Rosso and Thamar Solorio

Session W3: (16:30) Session 5

Detecting Stylistic Deception

Patrick Juola

Identification of Truth and Deception in Text: Application of Vector Space Model to Rhetorical Structure Theory

Victoria L. Rubin and Tatiana Vashchilko