Truth about Deception Detection in Court Testimonies

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What can we detect when it comes to deception?

- Sexual Predator detection
- Authorship Attribution
- Authorship Profiling
- Plagiarism Detection

* Tasks presented in PAN2012 and PAN2013
### Samples from Real World

<table>
<thead>
<tr>
<th>Designing a system based on Pennebaker’s Approach</th>
<th>Designing a system based on Skillicorn’s Approach*</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Decrease in First Person Pronouns</td>
<td>• Increase in First Person Pronouns</td>
</tr>
<tr>
<td>• Decrease in Exclusive word</td>
<td>• Increase in Exclusive word</td>
</tr>
<tr>
<td>• Increase in Negative-emotion words</td>
<td>• Increase in Negative-emotion words</td>
</tr>
<tr>
<td>• Increase in Motion Verbs</td>
<td>• Increase in Motion Verbs</td>
</tr>
</tbody>
</table>

## What are the words in Categories

<table>
<thead>
<tr>
<th>Word class</th>
<th>Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-person singular pronouns</td>
<td>I, me, my, mine, myself, I’d, I’ll, I’m, I’ve</td>
</tr>
<tr>
<td>Exclusive words</td>
<td>but, except, without, although, besides, however, nor, or, rather, unless, whereas</td>
</tr>
<tr>
<td>Negative-emotion words</td>
<td>hate, anger, enemy, despise, dislike, abandon, afraid, agony, anguish, bastard, bitch, boring, crazy, dumb, disappointed, disappointing, f-word, suspicious, stressed, sorry, jerk, tragedy, weak, worthless, ignorant, inadequate, inferior, jerked, lie, lied, lies, lonely, loss, terrible, hated, hates, greed, fear, devil, lame, vain, wicked</td>
</tr>
<tr>
<td>Motion verbs</td>
<td>walk, move, go, carry, run, lead, going, taking, action, arrive, arrives, arrived, bringing, driven, carrying, fled, flew, follow, followed, look, take, moved, goes, drive</td>
</tr>
</tbody>
</table>
First Person Singular Pronouns
Exclusive Words
Negative-Emotion Words
Motion Verbs
“We do not yet completely understand these models of word use, so the results here should be taken with a *Grain of Salt.*”

Future Steps in Resolving this Challenge

- **Concrete next steps:**
  - Filling the Gaps between Psychology and Technology
  - Search for correct datasets and correct approaches

- **Who and with whom:**
  - Computer Professionals, Law Enforcement Bodies and Psychologists

- **When and where:**
  - No limits

- **BCS and/or IFIP:**
  - Events to bring different sides together
  - Data, Data, Data
Thank you for your Attention

Any Question?

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