Here's another sneak peek at the September-October issue of mental_floss magazine. Click here to get a risk-free issue!

by Judy Dutton

Forget the polygraph. This cutting-edge software is putting fear into fibbers. But just how good is it? To find out, we put it to the test.

Catching liars is tricky. On average, our ability to pinpoint fibs is no better than chance. Even cops who are trained to detect deception are only successful 60 percent of the time. The polygraph, invented in 1921, improved those odds to around 65 percent, but it's so notoriously fusty that it's used mainly to elicit confessions.

Now, two professors at the Stevens Institute of Technology (SIT) in Hoboken, N.J., claim they've created software that ferrets out falsehoods; they plan on marketing it to firms and law enforcement agencies soon.

Too good to be true?

According to the creators, Rajanath Chandramouli and Kuduvayar Subbaiazhmi, the software works by analyzing the words we say, write, or type for red flags.

This basic idea isn't new: Back in 1901, Sigmund Freud noted that the truth often leaks out no matter how hard we try to cover it up, a phenomenon that came to be known as a "Freudian slip." The professors created an algorithm to prove it. Just upload at least 50 words of text, and within seconds, the software combs for 88 psycholinguistic cues that indicate whether the person delivering those lines is trying to cover something up.

To test it out, they uploaded 1,000 known email hoaxes from Snopes.com and other scam-tracking sites, as well as 1,000 truthful emails for comparison. The result: an 85 to 95 percent success rate in separating the phony falsehoods from the honest emails. It was so promising that the professors filed for a patent, formed InStream Media, and drafted a business plan to sell such software to companies that often run up against liars.

"Insurance companies could use it to detect false claims," says Subbaiazhmi. "Law offices could use it to sift through testimonies and know if someone's lying or not."

One added bonus: It's a gender detector, too. The software is designed to determine if an author is a man or a woman, and to do so with 80 to 85 percent accuracy—even when individuals try to pass as the opposite sex. To hone the gender radar, Chandramouli and Subbaiazhmi extracted data from more than 500,000 Enron emails made public after the company went bankrupt. Since the genders of the emails' senders were known, the software could comb for more than 156 cues indicating male or female styles of writing.

Gender detection could help users (and authorities) sniff out sexual predators online—or help identify the freaks trying to mess with our heads in Internet chat rooms or dating sites.

But James Pennebaker, a psychology professor who has studied deception for 30 years and worked with the FBI and U.S. Homeland Security, isn't yet sold. "It's a great idea, but anybody who claims they can detect lies at a rate better than 70 percent I don't believe. It's impossible," he says.

Still, he believes the technology could be useful when combined with other types of evidence. "Eyewitness testimony is known to be terribly inaccurate, but it's allowed in court," points out Pennebaker. Someday soon, he predicts that the FBI and other agencies will be using a computerized lie detector, either this one or another. "It won't be even remotely close to perfect," he says, "but it'll still do way better than humans."

The SIT professors see this technology affecting everyday life as well, with regular Joes tapping into a computer program to spot liars in their own lives—analyzing comments from coworkers ("Hey, awesome presentation today"), instant messages from unfaithful spouses ("Hi honey, I'm stuck late at the office")...
again”), or any suspicious emails that land in their in-boxes.

And maybe that’s just the start. Consider the uproar over Gay Girl in Damascus, a world-beloved blogger who was supposedly kidnapped by the Syrian government this past June, before reporters exposed that the blog was actually written by Tom MacNester, a 40-year-old dude from the state of Georgia.

The software could have outed this hoax in mere seconds. When it was fed a “Gay Girl in Damascus” blog post, it concluded that the author was male.

5 Signs of an Online Lie

Looking to unravel a tall tale? Watch for these red flags.

Words longer than eight letters: Long words aren’t typically used in day-to-day conversation, so people who employ them may be trying too hard to sound authentic—when, in fact, they’re pulling the wool over your eyes.

A lack of me, myself, and I: “In deceptive text, expect fewer first-person pronouns,” says Subbalakshmi. “This is because deceivers try to dissociate themselves from their words. This is done to avoid personal responsibility for their behavior.”

Too much you: Text riddled with second-person pronouns like you, your, or y’all are also suspicious. Often, it’s an attempt to deflect attention from the liar toward the person he’s trying to dupe.

No ifs, buts, or withouts: “Since lying requires cognitive resources, deceivers tend to tell a less complex story,” explains Subbalakshmi. “They typically do not distinguish between various branches in the story. This could be characterized in the form of a fewer number of exclusive words, like except, but, or without.”

A lot of hate, sad, and bad: “The act of deception induces short-term as well as long-term guilt,” says Subbalakshmi. “This leads to a higher frequency of negative emotion words.”

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The World’s Great Mysteries … Solved!?

We fed a few highly contested quotes into the software. Here are the verdicts.

IMF head Dominique Strauss-Kahn, on allegations he sexually assaulted a hotel maid

To all, I want to say that I deny with the greatest possible firmness all of the allegations that have been made against me. I want to protect this institution, which I have served with honor and devotion, and especially—especially—I want to devote all my strength, all my time, and all my energy to proving my innocence.

The Software Says: Lie

Michael Jackson, when asked if it’s acceptable to share his bed with kids

“Of course, why not? If you’re going to be a pedophile, if you’re going to be Jack the Ripper … that’s my choice. That’s how we were raised. And I didn’t sleep in the bed with the child. Even if I did, it’s OK. I slept on the floor. I gave the bed to the child.

The Software Says: Lie

O.J. Simpson, in his memoir I Want to Tell You about the murder of his wife

I am 100 percent not guilty, … When asked at my arraignment, where the charges against me were first formally stated in court, I said, ‘I am 100 percent not guilty.’ I said it again in Judge It’s chambers, and I say it again here.

The Software Says: Truth

The U.S. Air Force, on the existence of alien remains at Roswell

The research indicated absolutely no evidence of any kind that a spaceship crashed near Roswell or that any alien occupants were recovered thereafter, in some secret military operation or otherwise. …

All the records … indicated that the focus of the concern was not on aliens, hostile or otherwise.

The Software Says: Truth

Gender Detection Tips

Some of the ways to tell if a man or woman is behind the email:

“T” statements: Men use “T” more often—a subtle attempt to establish independence and brag about what they’ve done.

Triple punctuation: Women are prone to using multiple punctuation marks, as in “Are you really???” or “How exciting???” Men tend to use punctuation sparingly and often incorrectly.

Salutations: Women typically start their correspondences with “Dear Dave” or “Hello, Helen!” Men tend to skip this formality and launch right into what they want to say.

Really, very, quite: Women use adverbs to intensify their statements (“It’s really hot outside”), whereas men will most often deadpan, “It’s hot out.”

Women write more: On average, women write 119 words to a man’s 114. Women also tend to break their text into paragraphs, while men pile it all into one big block of text.
Of Lies and Literature

Throughout history, famous authors have written books from the perspective of the opposite sex. To find out how well they pulled it off, we ran the first paragraph of a few well-known works through the Stevens professors’ software. The first sentences from each novel and the results below:

Mary Evans, Middlemarch

“Who that cares much to know the history of man, and how that mysterious mixture behaves under the varying experiments of Time, has not dwelt, at least briefly, on the life of Saint Theresa, has not smiled with some gentleness at the thought of the little girl waking forth one morning hand-in-hand with her still smaller brother, to go and seek martyrdom in the country of the Moors?”

Verdict: Evans, who wrote under the pseudonym George Elliot, doesn’t dupe the software, which deems the novel’s first paragraph to be distinctly female.

Edith Wharton, Ethan Frome

“I had known something of New England village life long before I made my home in the same county as my imaginary Starkfield, though, during the years spent there, certain of its aspects became much more familiar to me.”

Verdict: Wharton’s unnamed gentleman narrator passes muster as male, according to the software.

Wally Lamb, She’s Come Undone

“In one of my earliest memories, my mother and I are on the front porch of our rented Carter Avenue house watching two delivery men carry our brand-new television set up the steps.”

Verdict: Lamb’s teenage girl narrator may have wowed Oprah, but the software is unimpressed, and pegs the writing as male.

Charlotte Brontë, The Professor

“The other day, in looking over my papers, I found in my desk the following copy of a letter, sent by me a year since to an old school acquaintance.”

Verdict: Brontë may be best known for her female characters, but her first novel was narrated by a man—and successfully so, according to this software, which says the writing sounds male.

Charles Dickens, Bleak House

“A Chancery judge once had the kindness to inform me, as one of a company of some hundred and fifty men and women not labouring under any suspicions of lunacy, that the Court of Chancery, though the shining subject of much popular prejudice … almost immaculate.”

Verdict: Dickens’ attempts to write from the POVs of his heroine, Esther Summerson, fails. It’s a man, baby!

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