SUNDAY, AUGUST 23, 2015 · THE WASHINGTON POST   EZ   EE   **E3**

The surprisingly high-stakes quest to design a computer program that 'gets' sarcasm

The Intersect

CAITLIN DEWEY

Sarcasm on the Internet, the Web adage goes, is kind of like winking on the phone.

It's pointless. It's invisible. It's almost always misunderstood.

And for linguists, pollsters, marketers, stockbrokers, law enforcement professionals and anyone else with a vested interest in knowing what people say (and mean) online, it has become one of modern computing's most vexing puzzles: Could we ever teach a program to recognize sarcasm — a human quirk that even humans mess up half the time?

"Sarcasm detection is a very difficult computational problem," says David Bamman, a computational linguist and an assistant professor at the School of Information at the University of California at Berkeley. His most recent stab at solving it — sponsored by the National Science Foundation, and published this year — correctly identified sarcasm on Twitter about 85 percent of the time, still a long way from ideal.

Part of the struggle lies in the fact that sarcasm, far from being "the lowest form of wit," is actually pretty sophisticated. Saying (or typing!) the opposite of what you mean is a form of what linguists sometimes call implicit speech: It's deliberately difficult to detect, especially on the Internet.

See, most of the cues that people have developed to signal sarcasm — a louder volume, a slower tempo, a suspicious lack of eye contact — do not translate well to writing (... a fact that any frequent sender of sarcastic e-mails can probably confirm with some embarrassment). In one 2006 study, readers correctly identified sarcastic e-mails less than 60 percent of the time. In another, three adults were asked to judge whether 270 selected tweets were sarcastic — and they disagreed on roughly half of them.

In part because sarcasm is so devilishly ambiguous, there's a surprising degree of demand for an automated tool or an algorithm that can reliably detect it. Not necessarily to save you the trauma of missing a joke, mind you, but to more accurately measure public opinion in its many, exhausting Internet iterations.

Sentiment analysis is already a booming industry: Dozens of firms peddle software that claims to gauge how much users of social media like your special interest, or your candidate, or your new line of discount hair spray. But given that snark is basically the lingua franca of the Web, there's a lot they could miss. Presidential campaigns are already finding, for instance, that sarcasm can single-handedly wreck their best estimates of voter sentiment. And what should Netflix make of a one-star review that reads "Give Nicholas Cage an Oscar for this"?

There are graver applications, too: Several government defense agencies, including the Secret Service and the intelligence group that conducts research for the NSA and CIA, have lately solicited proposals for sarcasm-detection software, or funded studies in that vein.

Presumably, the most immediate applications for those programs would involve gauging the seriousness of online threats — statements such as "I want to kill Obama" or "I think I'ma SHOOT UP A KINDERGARTEN," the Facebook joke that briefly landed a 19-year-old Texan in jail. ("If you saw the full context, it obviously reads like sarcasm," said Justin Carter's lawyer, who is still fighting after two years to get prosecutors to drop the charges against his client.)

And yet, given that people have so much trouble reading tone online, how much are we expecting a computer to do? Minus the overt winks we've developed to signal online sarcasm to our more oblivious friends — the #haha, the drawn-out soooooo, the ~ironic tilde~ — irony rarely signals itself in a way an algorithm can read.

Computer scientists have tried to address the problem by feeding massive batches of "sarcastic" data — tweets that include "#sarcasm," for example — into self-learning, pattern-seeking programs that look for recurring words, phrases and topics that people tend to reference when they're being sarcastic. Mathieu Cliche, who developed a public tool called the Sarcasm Detector when he was a PhD candidate at Cornell University, can reel off lists of words that skew sarcastic or sincere: "just what," "just love,"

"a blast" and "shocker" tend toward the sarcastic — but tweeters rarely talk about their mothers unless they mean it.

Alas, this approach has some pretty obvious holes. If I type "I just love it when the office is quiet in the morning" into Cliche's Sarcasm Detector — a true statement — it spits out a "sarcasm score" of 71 out of 100.

In other words, it's pretty much positive that I'm being sarcastic, simply because I used a statistically sarcastic word; the algorithm has no way of even conceiving of a quiet office, let alone the fact that a quiet office is a good thing or that I might appreciate one.

"In 2015, computers aren't so bad at understanding language," says Christopher Manning, a professor of computer science and linguistics at Stanford University. "But they're still pretty bad at understanding the world."

For sarcasm detection to really, truly work, Manning says — for Netflix or the Secret Service or anyone else — the technology will have to move past the mere words we use to be sarcastic, and to begin to understand the lived human experience.

There are some glimmers on that front: In the past six months, two papers have proposed ways for sarcasm-detection algorithms to account for more than just words. Bamman's recent attempt at gauging sarcasm on Twitter — the one that scored 85 percent accuracy — sought to understand the speaker, the audience and the relationship

> "In 2015, computers aren't so bad at understanding language. But they're still pretty bad at understanding the world."
>
> Christopher Manning, professor of computer science and linguistics at Stanford University

between them by also ingesting contextual information from their past tweets and Twitter bios. (Fun fact: Being unverified, male and American, tweeting about art and TV, and having the words chemistry or #atheist in your bio are all strong predictors of sarcasm.)

Another similar paper about Reddit, published just last month, found that sarcasm-detection becomes far more accurate if the algorithm knows not only what was said, but where — as in, did someone drop an "I love Obama" in r/conservative, r/liberal or r/obamacare?

This is still small fries, of course — but it's a step toward teaching computer programs the complex, multivariate relationships between things and ideas in the real world. And that, in turn, is a step toward deciphering Internet sarcasm. And that's a step toward . . . well, who knows.

Maybe a step toward a machine that not only can process concepts such as silence and noise, or morning and afternoon, but also can conceive of feelings such as distraction and stress and how they might relate to a quiet newsroom.

"A true sarcasm detector will need to understand people — what they like, what they think," Manning said. "We've already made enormous advances in things like speech recognition, things we once thought of as artificial intelligence."

Maybe, if researchers have their way, snark recognition is next.

caitlin.dewey@washpost.com

At Hillyer Art Space, 3 explorations of 3-dimensionality

BY MARK JENKINS

Various approaches to three dimensionality are what links the trio of artists now showing at Hillyer Art Space: sculptors Rob Hackett and Michelle Dickson and photographer Kim Llerena. Hackett suspends wooden beams in midair, but also makes prints that have a sliver of depth. Dickson combines found pieces of wood with casts of her own face, a process that's both random and personal. Llerena photographs text in Braille, which renders words tactile.

Hackett's "Equidistant" is eight large timbers, hanging on steel cables at an angle to the walls of Hillyer's largest gallery. It's sculpture as architecture, or the opposite, and illustrates ideas of tension and balance, light and shadow. It also expresses the sheer joy of resisting gravity and making objects do things they really shouldn't.

There's less bravado to Hackett's prints, which are collages based on photographs of his sculptures. Yet the cut-out pieces of paper sit just slightly above the paper surface, which is enough to give them an affinity with the dangling beams.

Where Hackett's woodwork is architectonic, Dickson's, in "Neither Mine Nor Yours," is instinctive. The Baltimore artist grafts her countenance onto gnarled pieces of wood in ways that suggest mutation and decay, but always with the primacy of self-image. One individual is the measure of all things.

Llerena's "Ekphrasis" consists of large-format photographs of passages in Braille. The words, unreadable by nearly anyone in this flattened form, are ironic. They include an account of a Van Gogh painting written for blind readers — an ekphrasis is a vivid description of something — as well three quotations from Roland Barthes, who pondered the subjectivity of reading and writing. Further, the photos are designed to illustrate an aspect of the text. What keeps this exercise from being numbingly academic are its rich colors. The deep blue, green and red are worthy of its own ekphrasis.

Rob Hackett: Equidistant; Michelle Dickson: Neither Mine Nor Yours; and **Kim Llerena: Ekphrasis** On view through Aug. 29 at Hillyer Art Space, 9 Hillyer Ct. NW. 202-338-0325. *www.hillyerartspace.com*

East of the River

The largest piece in Honfleur Gallery's "8th Annual East of the River Exhibition" places paintings of three men behind bars and a partial brick and cement-block wall. Luis Peralta Del Valle's "Trouble Maker Installation"

groups Nelson Mandela, Cesar Chavez and Martin Luther King Jr., all of whom were jailed for their activism. Equally epic, if less historical, is David Ibata's "A Man Has Got to Have a Code," in which a woman hugs a bloodied swordsman; the painting suggests a gangsta-rap video directed by Kurosawa. These two works complement James Terrell's urgently graffiti-style "Help Me Bmore," in which a man in a Maryland-flag tank top raises his hands in a gesture of surrender, a gun sight trained on him.

The four other artists' work is less openly political. BK Adams/I Am Art contributes a vast silver-clad abstraction, while Electra Bolotas's three canvases colorfully mix representation and abstraction. The hint of Cubism in her work echoes in Chanel Compton's collage portraits, which build faces from bits of paper, fabric and painted cardboard. All of the participants "live, work or have roots in D.C. communities east of the river," the gallery explains, but only Susana Raab's photographs explicitly depict the area. From the Kenilworth Aquatic Gardens to an Alabama Avenue yard full of flowers and figurines, Raab details neighborhoods that are as diverse as this show.

The 8th Annual East of the River Exhibition On view through Aug. 28 at Honfleur Gallery, 1241 Good Hope Rd. SE. 202-365-8392. *www.honfleurgallery.com*

Leigh Merrill

"Cloud Seeding," Leigh Merrill's photography and video show at Target Gallery, is about nothing less than the United States of America. That's clear from two vignettes that include a version of the star-spangled banner: The flag actually flies in "Cherry Hills," a triptych, while in "Carts," it is represented by patterns of white, blue and red — the last a jagged stripe that's a lineup of shopping carts.

The image suggests the exterior of a Target store, but Merrill is not a documentary photographer. The Dallas resident digitally stitches together multiple images to craft scenes of Sun Belt blankness. In "This Place," pink walls flank white billboards, and all the surfaces lack words or logos; it's an archetypal vision of everyday big-box utilitarianism,

The only signs of life are in the sky, where birds can be glimpsed and clouds defy the geometry of the hard-edged, right-angled structures. In the title video piece, a white puff moves up and down, hovering above a streetlight in a tight loop. The sky, too, is archetypal, but with possibilities the built environment lacks.

Leigh Merrill: Cloud Seeding On view through Aug. 30 at Target Gallery, 105 N. Union St., Alexandria. 703-838-4565, Ext. 4. *www.torpedofactory.org/partners/target-gallery*

Summer Splash

Robert Brown Gallery and Neptune Fine Art, which share a townhouse in Georgetown, also collaborate on an annual dog-days show called "Summer Splash." As in previous years, this edition mostly features work the two dealers have shown before. What's different is the venue: Gallery Neptune and Brown, a new Logan Circle location in the space previously occupied by Gallery Plan B. It will supplement, not replace, the site 20 blocks west.

The six-artist "Summer Splash on 14th Street" features Mel Bochner's prints of blocks amid plaid-like patterns, and two bold Alex Katz screenprints of women in black hats and sunglasses that set off gold backdrops. Also included are a large Oleg Kudryashov print with watercolor that softens black lines with pastel splashes, and an Erick Johnson painting in which six rectangles of color sweep toward each other and off the canvas.

The hues are bright and unadulterated in Polly Apfelbaum's woodblocks of flower-petal forms, although one is in black-and-white for contrast. These sunny pictures hang across from five stark prints by Richard Serra, which reinterpret the spiraling forms of his vast minimalist sculptures. Smudgy and grainy, but also elegant and strong, Serra's blurred lines balance the industrial and the poetic.

Summer Splash on 14th Street On view through Sept. 5 at Gallery Neptune and Brown, 1530 14th St. NW. 202-986-1200. *www.neptunefineart.com*

style@washpost.com

Jenkins is a freelance writer.