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FOOD

A new way to think about food

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thetic Cookbook, brought Liu to national attention two years ago. He is still trying to explain it — most recently at food-world conferences in Napa and West Virginia, where both times he caused a stir — while moving on to more daring concepts. His latest computer project, "Gulp Fiction," creates recipes to order.

"Hugo was like a wet finger in an electric socket," says Antonia Allegra, who organized a food writers conference at the Greenbrier in West Virginia in May and booked Liu after hearing him speak at the Taste 3 forum in the Napa Valley earlier this year. "People who didn't understand a word knew what he was saying was very important."

Allegra, who described Liu as "the most other-worldly speaker we have ever had," adds, "If what Hugo is saying and doing is feasible, it won't be necessary to have a human writing recipes in the next five to eight years."

Liu has many other ideas on his plate beyond spurring cookbook writers weeks over a hot stove, however. In applying artificial intelligence to aesthetics, he says his overall goal is to "help people become fluent in taste." And he is clearly equipped with one of the more free-ranging minds in food today. Whereas Harold McGee brought rigorous science to bear on food, Liu contributes a combination of linguistics, imagination and fascination.

Within minutes of meeting him, he might be cupping his hand over his ear, asking whether "you listen to what your body is asking" and launching into a mini-lecture on how rats understand innately what to eat to keep themselves healthy. He might be offering you bar-shaped Dutch salted licorice and noting that it is among the few licorice products that actually contains the pungent root. And he will definitely be explaining that what drives his interest in food is a desire for companionship, plus the fact that "I have a lot of vices. I eat fete gras too often for my heart. I smoke pipe tobacco. I drink lots of Scotch and sake."

Olives and durian?

Liu is not your average food fiend. He was born in China and lived there until he was 6. His parents, who both worked for the United Nations, and family roots in different regions of the country, which meant he grew up with rice on his father's side and noodles on his mother's. He received his doctorate in media arts and



'ARTFUL' INTELLIGENCE: MIT Media Lab's Hugo Liu believes recipes have outlived their usefulness. He considers his latest work "food conjuring."

sciences from MIT in June 2006 (as an undergraduate, he minored in baroque music).

Among the groundbreaking projects that caused a sensation at the Greenbrier are what Liu calls Taste Spaces, essentially "maps" of a sort of taste system of different kinds of foods and wines. By parsing descriptions online (33,000 of wine alone), he groups Champagne with Muscat, Gewürztraminer

and Tokay. Morels are grouped with wasabi and poblano chiles; fete gras with Cognac and ambrosia; and olives with durian and shiitakes. Human intelligence would balk, as Liu has found, particularly among longtime food writers, but sorting them by common descriptions or contexts online simply puts them together.

He can draw up a similar map of a food writer's taste buds by running rec-

ipes or articles through his program and determining which ingredients and words turn up most often.

On a recent afternoon, given his choice of anywhere for lunch, Liu suggested a cab to the nearest Whole Foods, where he loaded a basket with a platter of local barbeque, an oozy wedge of Brie cheese and a bottle of artisanal kimchi sauce, all to be eaten and drunk off plastic in the picnic seating area. He admits he was a picky eater until recently but has decided there are three A's to be mastered as a sophisticated consumer: acclimate (eat kale every which way), appreciate (decide it tastes good) and associate (describe it well enough to persuade someone else to try it).

Sensation elicits emotion

AND it is the last verb that matters most to him, with his background in computational linguistics and his belief that "good tastings have to know not just words but be able to conjure meaning." He describes his favorite sake as "tasting like Carnation Instant Breakfast" but says someone else might note bananas, or even the heat of a banana boat. One day, he imagines, "customers could order words, not food — 'Bring me some whimsical!'"

Liu says he found recipes extremely easy to parse in producing "The Synthetic Cookbook," which analyzes 160,000 recipes "clipped" from the Web and broken down by 5,000 keywords for ingredients and 1,000 for descriptions (spicy, tasty). A user searching the database, which is behind an MIT firewall today, could call up a screen with a plate on it and order dinner ideas for the whole family. "Boer" would bring up countless possibilities but could be refined with "spicy," "herbaceous" and, especially, "comforting." Individual family members' likes and allergies could also be plugged in to decide on a dish.

The "cookbook" is a revelation not so much for the recipes, though, as for how they are ultimately summed. Synthesetics is the physiological process in which a sensation elicits an emotion (or a sip of wine evokes a color), and Liu's unique original work contains 880,000 aesthetic associations and 100,000 contexts, or emotions.

But while his first "cookbook" draws on recipes already in existence, ones any computer user could find by the literal thousands on sites such as epicurious.com, "Gulp Fiction" is a leap into uncharted terrain. It reflects Liu's interest in collecting "words and virtualities" — uncooked recipes and imagined

foods," hence the title.

The user of this program can have it write a recipe, selecting from essences Liu has programmed as being necessary to make a French, or a Cajun, or a Japanese dish. The fun is in the context: A request for "sad" oatmeal produces a recipe with red wine, beer, gin, vodka brandy and soda; "poetic" pizza has no crust; "perverse" deviled eggs call for apricot preserves.

Judging by a demonstration in Liu's tiny shared office in the Media Lab, "Gulp Fiction" at this point is more "textual eating," as he describes it, than "cooking" miracle. Ask it for an enchilada recipe, he explains, and it will produce "not any enchilada recipe but an essence of all enchilada recipes — it doesn't copy any recipes." The ingredients it lists will need some pruning ("1/4 small Chinese," for instance, is not likely to be found in most refrigerators), and while its directions are lyrical and almost hypnotic, they are also whimsical to the point of nonsensical: "Wilt the salt. Wash the bay leaf. Red the white pepper. Cheese the mayonnaise."

A halfway-seasoned cook can make a dish from "Gulp Fiction" work, however. And the program does combine ingredients even a thoroughly seasoned cook might not think to bring together in one bowl: shiitakes, anchovies and watercress in potato salad, say, or white chocolate, green tea powder, rose petals and cherries in ice cream.

Liu considers his latest work "food conjuring" and admits that "I get a kick out of reading this, but the kitchen chemistry has not kicked in." In short, it is not dissimilar from what many Internet junkies would call food porn, dishes to be drooled over rather than actually eaten.

"You can never take people out of the equation," Liu says. "But this takes the dull work out of their hands. It helps them focus on what humans are really good at." And that, he says, is more "testing than generating" recipes.

So why, given his cybernetic devotion to them, does he hate recipes? "Why do you like speaking in fresh sentences?" he responds. "Recipes used to be handed down. They used to mean something. They meant something when it was Yogi's home cooking, but that's not what it means anymore. Someone you don't know is telling you something, and you don't know if you should trust them."

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