'Food in the Fridge' hack wins top prize at Yahoo! competition

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Most college students wouldn't need a digital app to tell them what's in their refrigerators, since the answer is usually "not much."

But a group of graduate students from the University of California, San Diego's Jacobs School of Engineering knew the idea had some merit — and fortunately for them, Yahoo! felt the same way.

Their "What's in My Fridge?" website design for iPhone won the technology company's Hack U Hack Day competition at UC San Diego (and the 'hack' here means 'hacking something together,' not 'hacking into' something). It was the culmination of a week of "learning, hacking and fun" led by Yahoo! experts. The event is held every year at a select group of college campuses around the world.

"The level of enthusiasm, creativity, and sophistication across each of the hacks this year is what keeps us coming back to UC San Diego," said Jamie Lockwood, Academic Relations Manager for Research and Engineering at Yahoo!

Hackers David Vanoni, Lynn Nguyen, Andrew Huynh and Leilani Gilpin beat out 30 other teams from UCSD and each took home an iPad for their efforts (for a full list of winners, see below). They now have the chance to compete with the top contenders from each university at a nationwide "Hack-a-thon" championship this September in New York City. This year's competing universities will include Georgia Tech, the University of Washington, the University of Texas at Austin, IIT

Kharagpur in West Bengal, India, and Universitat Politècnica de Catalunya in Barcelona, Spain.

"Say you're at the grocery store and you need to remember what you need to buy," explained Vanoni about the team's winning hack. "It would be nice to have a way to know what's in your fridge at all times."

For their entry, the team tricked out a mini-fridge with a suite of pressure sensors and an Arduino microcontroller, which was wirelessly connected to a server. When the sensors detected that something was in the fridge, a question mark appeared on an associated website, which was optimized for use on mobile phones. It's up to the user at that point to replace the question mark with a description of the item, such as "gallon of milk" or "5 lb bag of apples."

Vanoni said ideally the system would involve barcodes or another method to automatically track the food items, and it would also detect when something was removed from the refrigerator. The team attempted to use the sensors to track items in the fridge based on their weight, but "they were too finicky," noted Vanoni. And with only 24 hours of competition time to perform the hack, they had to keep things simple (as well as sacrifice a night of sleep).

"One cool thing about the app," he added, "is that it has a social networking component called Fridge Connect that lets you 'connect' to your friends' fridges. It doesn't reveal the actual contents of your fridge, for privacy reasons, but it will suggest recipes based on the contents of your combined fridges."

Vanoni, Huynh and Nguyen are all affiliated with the UC San Diego division of the California Institute for Telecommunications and Information Technology (Calit2), and the app was developed at Calit2's headquarters in Atkinson Hall. Vanoni and Huynh are both trainees in

the Integrative Graduate Education and Research Traineeship (IGERT) and are fully supported by the National Science Foundation to work on cultural heritage diagnostics research in Calit2's Center of Interdisciplinary Science for Art, Architecture and Archaeology (CISA3). Nguyen works for Research Scientist Jurgen Schulze in Calit2's Immersive Visualization Lab.

Huynh and Vanoni have become the team to beat at the UCSD Hack U event — they've walked away with the top prize at two of the past three competitions. Their hack last year, which they developed with Computer Science student Matt Peterson, was a mobile app called "Rock My World", which locates nearby concerts and music events based on a user's music preferences. Huynh is currently working on version 2.0, which will mine the user's iTunes library to make music recommendations.

Meanwhile, the team's prototype fridge is still sitting in the apartment Huynh and Vanoni share, ready for the next round of tweaks. It's not plugged in so there's nothing in it, said Vanoni, but if he ever does decide to stick a sandwich inside, it's hands-off for Huynh.

"Can 'What's in My Fridge' tell me if my roommate stole my sandwich? Yes, yes it can."

Provided by University of California - San Diego