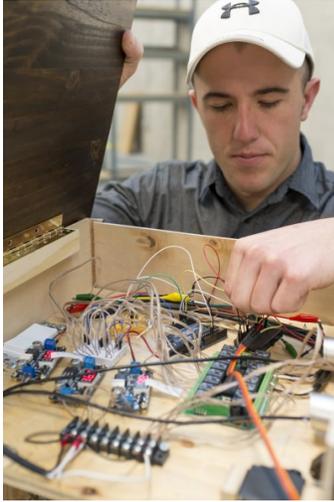


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Young Nampa entrepreneur creates robot butler

By: Benton Alexander Smith April 27, 2016 0



Gabe Bentz works on his robot.
Photo by Pete Grady.

The owner of a Nampa-based startup was so inspired by the robots in the cartoon series “The Jetsons” and in the 2004 movie “I, Robot” that he moved his business to create what he calls a robot butler.

Gabe Bentz graduated from Embry Riddle Aeronautical University in Prescott, Ariz. in December and pivoted Slant Concepts, the 3D printing consulting company he founded to help pay for college, into a company focused on robots.

The 23-year-old looked at several markets including San Francisco, but chose Boise because of its low cost of living and cheap business expenses. He began renting space from the Nampa TECenter in March.

“What really got me thinking about building a truly universal robot, a robot that anyone could apply to something, began when I watched the movie ‘I,Robot,’” Bentz said. “In that kind of world robots are really ubiquitous and are being used for anything.”

Bentz spent the first few months after graduation drawing the design for his robot and began constructing it after joining the Nampa TECenter. He now has his first working prototype — Jerry.

“He created a video and the first time he showed it to us I asked him if he was using stop motion,” said Doug Covey, Nampa TECenter director and regional director of the Small Business Development Center. “But he had already built the entire robot back in that tiny room.”

Bentz is the only employee with Slant Concepts, but he plans to hire two computer science graduates with robotic software experience in two months after he launches a Kickstarter campaign focused on selling Jerry to schools and developers.

Jerry has largely been designed using open-source software. This software allowed Bentz to program the robot’s technical movements so that it can sense where its arm is in relation to a room. He is going to rely on the public to help program more specific actions such as grabbing a coke out of a fridge.

“As we get further into this, we will design an app so people can adapt it to their houses,” Bentz said. “They will be able to teach it different tasks by going to the app and saying, ‘I have this type of fridge so this is how you open it.’ The specific development will be programmed by developers.”

There are robots more advanced than Jerry in development, such as Tiego, which is made by the Spanish company PAL Robotics. Tiego is designed to help with assisted living for the elderly and sick, the company said. It has several motors that give the robot’s arm a range of motion similar to that of a human arm. The arm can rotate at the shoulder, elbow and wrist.

Jerry was designed to be less sophisticated, Bentz said. The robot features only one motor. This limits Jerry’s range of motion to just the shoulder, but it keeps the robot’s retail price down while ensuring that the robot can pick up items from the floor and as high up as three feet.

"To be honest those other robots have more capabilities," Bentz said. "The philosophy at Slant has been to create a minimalist robot, a robot that can do as much as possible for as little as possible."

Jerry's exterior is wood, and has fewer sensors than Tiego. Jerry derives most of its data from its front camera instead of sensors throughout its body.

"It's a minimalist body that puts the burden of performance on the software," Bentz said.

Tiego is expected to retail between \$34,000 and \$68,000 depending on specific modifications, according to the website Actualidad Gadget. Jerry is expected to sell for \$2,500.



Gabe Bentz demonstrates what his robot can do. The robot can pick up items from the floor and from as high as three feet in the air. Photo by Pete Grady

Bentz said he graduated at the right time to enter the robotics field. Robotics was popular in the 1980s, but computing capabilities were not powerful enough to create robots such as Tiego and Jerry. By the time computing had caught up, the Internet and later smart phones drew talented developers away from robotics because the startup cost of creating an app or website was lower.

Those three fields are starting to converge again as advanced manufacturing practices are lowering the costs of robot components. Idaho may be well positioned to capitalize on this, Idaho Technology Council President Jay Larsen said.

"We have the ability to print and to do things a lot more commercially," Larsen said about how manufacturing advancements are making some of the components used to build robots such as motors cheaper. "Instead of 20,000 parts at one time you are creating them in the millions."

Idaho companies have built a talent pull that creates the potential for robotic companies to sprout, Larsen said.

"Robotics is a field where you have firmware, hardware and software converging," Larsen said. "Idaho has played significantly into the software side and now in the Treasure Valley they are adding material science classes to Boise State University and there is also a big materials push in eastern Idaho with the INL. Talent will be key to this thing and thanks to companies like HP and Cradlepoint, Boise also has experience in Firmware."

Firmware is a type of software that controls and monitors a system or device. Firmware is common within devices that feature embedded systems that transmit data such as remote controls.

Slant Concepts' Kickstarter campaign will begin in May and orders are expected to be filled around August. A home version of Jerry will become available after developers have had access to the robot for about a year, Bentz said.

Bentz has paid for the company's expenses out of pocket until now, a total of about \$3,000. Depending on how successful the Kickstarter campaign is he may look to borrow money from a lender or investor. The campaign's goal will be \$20,000, Bentz said.

Jerry Multipurpose Home Robot Pro...  



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ABOUT BENTON ALEXANDER SMITH



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