Sibling power

Massachusetts Institute of Technology

It’s not often that you find two siblings more in sync than Andrew and Jennifer Barry. They go on long runs together along the Charles River, play Frisbee together during the summer and both study robotics at the Computer Science and Artificial Intelligence Laboratory (CSAIL). They work just one floor apart at the Stata Center, meeting each other for candy breaks and long runs where they often spend mile after mile ruminating over their latest research problems.

The Barrys’ interest in robotics was cultivated at a young age thanks to the encouragement of their parents. Both of their parents are active scientists — Dan Barry is a retired NASA astronaut with a passion for robotics, and Susan Barry a neuroscientist — and Andrew and Jennifer grew up in a household where building robots and remote control cars were regular weekend activities.

The two recalled one of their first projects, a contraption they dubbed RoboDad. As their father was often traveling for work, either at NASA’s Houston headquarters or flying missions in outer space, Andrew and Jennifer rigged up a system whereby they could communicate with their father with the simple touch of a button, even if he was hundreds of miles away.

“We made a very early telepresence robot for which we got a remote control truck, and strapped a camera to the top. Then we got one of the very early wireless video transmitters,” Andrew says. “We did a bunch of circuit design, and we did some programming, but this was really beginning engineering for us. At the end of the day, though, Dad could be in Houston or Japan and press a button and the car would drive forward, and he could see and talk with us.”

Nowadays, Jennifer works on robotic mobile manipulation planning as an electrical engineering and computer science graduate student in Professor Leslie Pack Kaelbling and Professor Tomas Lozano-Perez’s Learning and Intelligent Systems Group. She works mainly with Willow Garage’s PR2 robot, developing algorithms that will allow robots to maneuver a variety of items under uncertain conditions. Her work helps robots advance far beyond their traditional range of movement, which is currently confined to simply grasping objects between their grippers.

Andrew, a graduate student in Associate Professor Russ Tedrake’s Robot Locomotion Group, works on developing control systems for making small aircraft fly through dense forests at high speeds. He is currently working on developing an autonomous aircraft capable of fast, accurate and repeatable flight that Tedrake hopes will one day be able to navigate both urban and rural environments like a bird.

While they both currently work in the field of robotics, the siblings took different paths to studying the field at CSAIL. Jennifer, who is two years older, found herself more drawn to math and physics as a child, and besides a few small programming

projects she undertook — including an eighth grade science fair she won by developing a prime number solver — she steered clear of computer science and programming until college. She majored in physics at Swarthmore College, but her father encouraged her to sign up for robotics courses, which piqued her interest in the field. Andrew, meanwhile, was constantly building things as a child and loved programming and fixing computers. After graduating from Olin College, he came to MIT, following a more traditional engineering trajectory.

The two were thrilled when Andrew joined Jennifer at CSAIL and have found their relationship blossoming on a whole new level now that they work in the same environment. The two carry on a playful banter in conversation, joking about which one is conducting the more interesting research, yet clearly exhibit a deep appreciation and innate understanding for one another. Andrew will not let Jennifer, who is quite humble, undersell her achievements, while Jennifer provides Andrew with compassion and care.

From expounding on research ideas during their runs to providing a non-judgmental ear to share their troubles, the Barrys have found new ways to help one another grow and mature, both personally and professionally.

“It’s nice to have a person who has close enough interests to what you are doing to understand your work, but has no stake in them. We’re not in the same research group, we’re not trying to do the same things, but he’s someone I can go talk to about what I’m doing, and he can just listen to the problems I have. My lab mates are also great for that, but it’s good to be able to get away from people who are trying to do the same thing and talk to someone else sometimes,” Jennifer says. “Andy is someone I can always ask for advice without having to worry he’s going to judge me.”

Jennifer is expecting to graduate this spring, and is eyeing a potential move to the West Coast. Both siblings are hopeful that they will eventually end up on the same coast so that they can continue to build upon their CSAIL traditions and their close friendship.

“It’s been really great being here with Jenny. I know when I first got here, there were a lot of things where I didn’t know what was going on and Jenny was always there for me. When we get sick we bring each other food. Well, mostly Jenny brings me food,” says Andrew, sharing a laugh with his sister.

Source URL (retrieved on *04/23/2014 - 7:18am*):
http://www.ecnmag.com/news/2012/11/sibling-power?qt-recent_content=0&qt-video_of_the_day=0