David Vanleeuwen

Team
Team Awkward Turtle (2108)
2007-2009

Broughton Robotics (926)
2006

Years on team
2006-2009

Employer
SpaceX
Software Engineer (Control Systems)
Rocket Development Facility, McGregor, TX

Length of employment
~4.5 years; May 2013 - present

What is one highlight from your time on the team?
My most memorable highlight from my time in FIRST robotics was working with some
incredible mentors and team members to found Team Awkward Turtle in late 2006. Starting a

team had a lot of challenges, such as finding a teacher sponsor at Green Hope, gather funding, finding a build-space and convincing students to join a new team with no reputation. When the 2007 build-season came around, we were building in one of our gracious mentor's garage. We tried to be realistic about our goals as a new team, so we came up with a simple design that would play defense and strive to capture all the end-game points possible. This strategy ended up working extremely well at the regional level, and we ended up winning the Virginia regional with a small, new team. We were just happy to be competing as new team, but it is always exciting when the hard work you put in pays off.

What are the top three skills you learned from your FIRST experience that have made an impact on your current job?
The biggest thing I learned from the FIRST program was how to work through large problems with a group of people with diverse backgrounds. This is something that is not really even taught well in most university programs without doing a lot of extracurricular activities such as research, internships, etc. It is crucial to be able to work professionally with others on massive projects.

FIRST taught me how to work on projects utilizing concurrent engineering. Instead of designing an entire product, then building the entire product, and then testing the entire product, concurrent engineering is where you design enough to begin production and testing on the parts of the design that are likely to not hinder other parts of a design. While building those designed parts, you begin designing and prototyping other parts of the design. In FIRST, if you had to design the entire robot before building any parts or prototypes, finishing the build in 6 weeks would not be feasible. SpaceX follows the same methodology. We design enough to get started on production and testing, while continuing to refine the design. Our team has to be unfazed by rapid change in strategic direction. Even after dumping time and money into a solution, you have to be ready to rework some or all of the design.

While competing in FIRST, I also learned how to be scrappy. In the first year of Team Awkward Turtle, we designed a robot with metal shelving, wood, and lots of zip ties. These parts are not specifically designed for use in robotics, but they worked well. Thinking outside the box and not necessarily using the first obvious solution can sometimes save time, money and produce a better product. Using the right tool for the job is great if you have it, but often the best tool for the job is the one you already have.

How has FIRST impacted your choices (school, career, etc…)?
Prior to participating in FIRST robotics, I had no idea what I was interested in studying or pursuing as a career. Working on robotics projects with other students and inspiring mentors, I found out that I had a real interest in Engineering. I attribute much of the reason I became an engineer—working for SpaceX—to FIRST robotics. I started taking part in FIRST robotics because it seemed exciting and enjoyable, but I got inspired to continue engineering. Now I enjoy most of what I do at work, as much as I enjoyed building robots in FIRST.

What words of wisdom do you have for current FIRSTers?
I would tell current FIRST students to continue participating in extracurricular activities, such as FIRST robotics. The biggest thing my company looks for when recruiting is experience and

drive. Grades can prevent you from getting a job, but they are not what get you the job. What gets you the job at SpaceX is being able to point to something that you did which showcases your skills. We are always looking for people with drive, that go above and beyond what is expected. FIRST is great at teaching you new skills, having a product you can point to that you designed and built, and proving that you have what it takes to go above and beyond.

Click here to check out a cool test video: https://youtu.be/1_FXVjf46T8.