



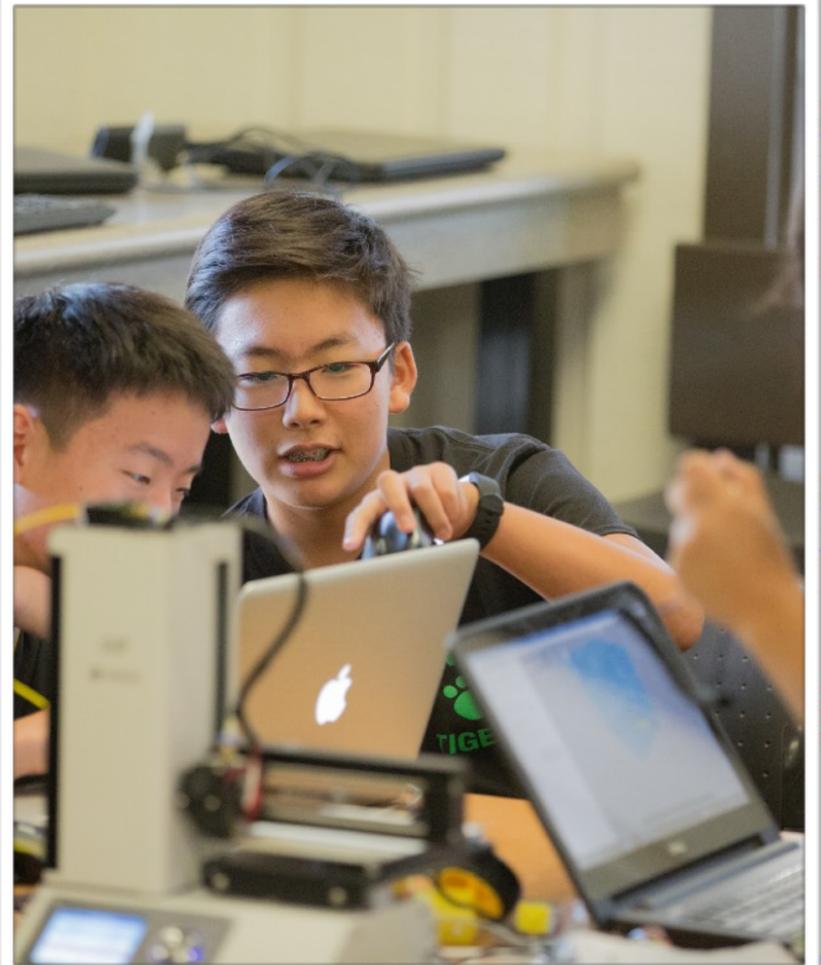
Truck Horns

# Kew Hawthorn's CV



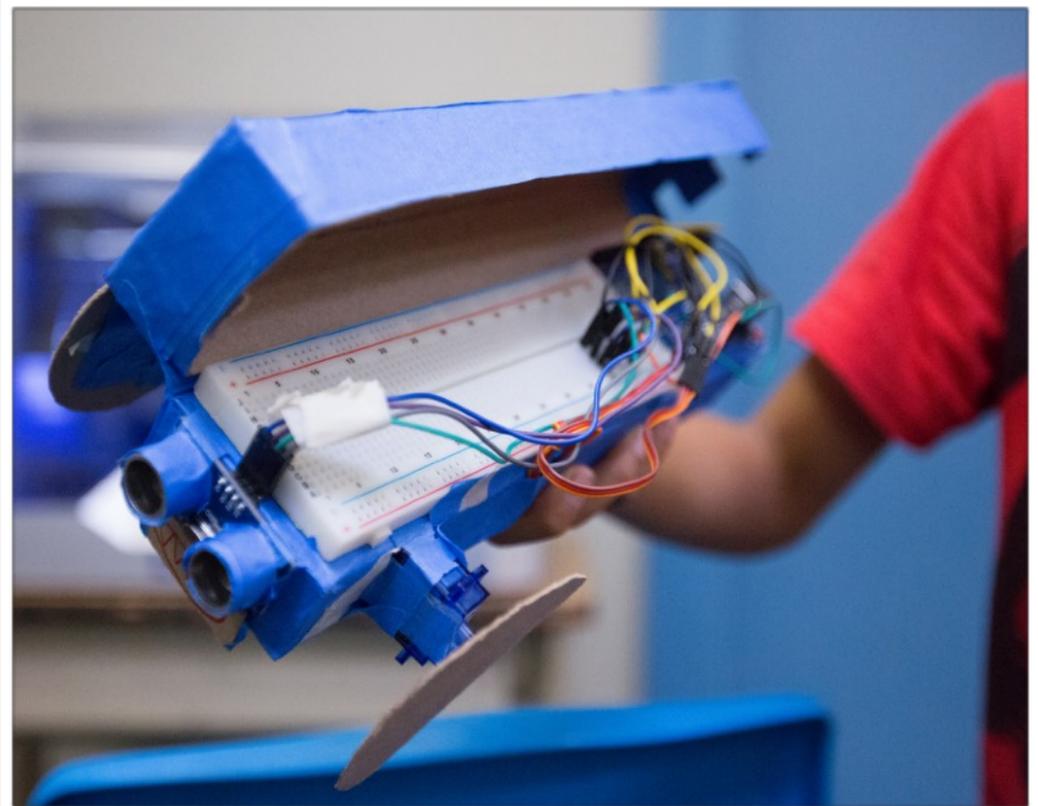
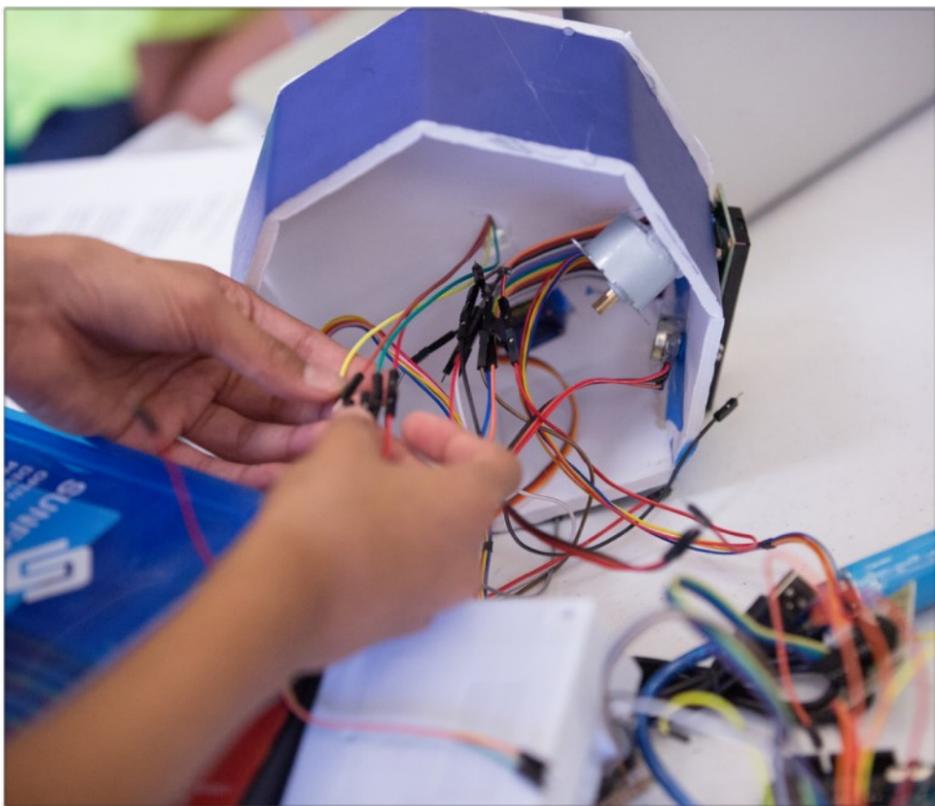
# Mechatronics @ St. Raymond

Over the last 5.5 years I have built the Mechatronics program at St. Raymond elementary school in Menlo Park. The program is unique in that it strives to empower students with Maker-skills combining hardware, coding and chassis design within the context of Design Thinking. Arduino, BBC Microbit and Raspberry Pi are used along with stepper motors, servos, moisture sensors and other discreet hardware to sense and affect the real world with decisions being made in a variety of coding languages. Students explore chassis design by combining a range of low-tech and high-tech prototyping tools from cutting cardboard to using a knee-mill to textiles.



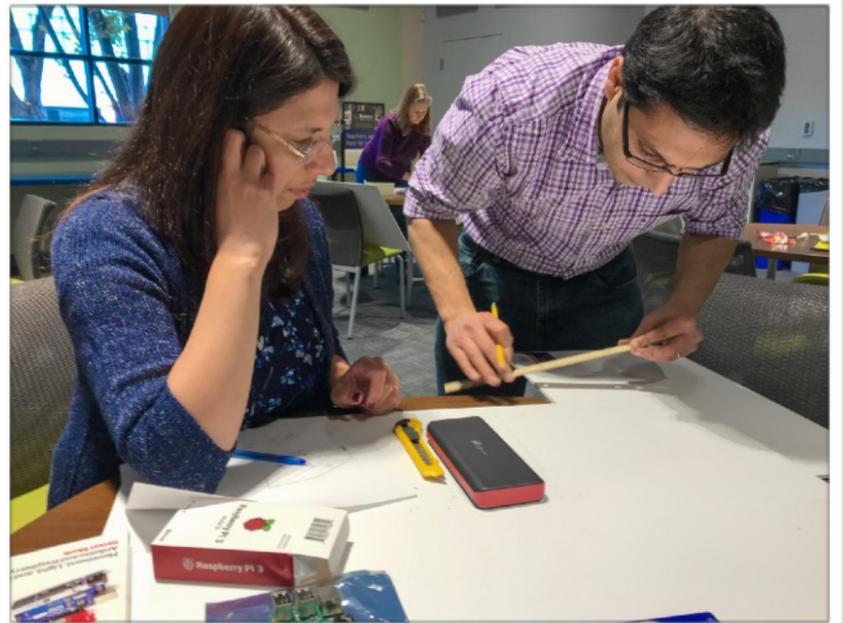
## Summer Camps

Over the last couple of summers I have built several Integrated Engineering summer camps for 6th to 8th grade students. Expanding on the Mechatronics program I built at St. Raymond with more complicated projects that iterate through more frequent design cycles and incorporate the principals of Design Thinking out the the Stanford D-school with a focus on empathy. Through this experience I have seen the transformative power of camps and how they can reach a broader cross-section of any particular community.



# Professional Development Workshops

While working formally as a teacher for the last few years has been tremendously rewarding, I realized early on that without sharing my own classroom experiences and design/STEAM lessons, that I was limited in the impact I could have on my community. My goal has been to shift more time towards a career that includes offering professional development workshops to other teachers based on the curriculum of my school-day and camp programs. A large part of this is translating my experience integrating Raspberry Pi into classroom projects. I have had a lot of success with teachers working in teams in the same way my students work in teams to build projects that integrate chassis design, hardware and coding into complete machines that meet the needs students and teachers see in society.



## Student Racing Partners

I worked as a consulting mechanical engineer in my first career helping startups build proof-of-concept prototypes. My first experience working in education was volunteering at a Belle Haven school in East Palo Alto, bringing my hobby of building radio control model race cars to working with academically at-risk students. This program expanded over the course of ten years to serve over 1,600 students in 17 school districts. Lots of Girl-Power experiences came out of adding the capital "A" to STEM to get STEAM. This endeavor pulled me into the world of technology education and I have never looked back.



### Techshop

When Jim Newton founded Techshop I built the initial education program for both students and adults. This was a unique community workshop where members could come in and use tools typically not available to them like laser cutters and welding equipment.

### Engineer

By training I am a Mechanical Engineer. I worked with small companies on early prototypes. I have a US patent for a high torque CVT.

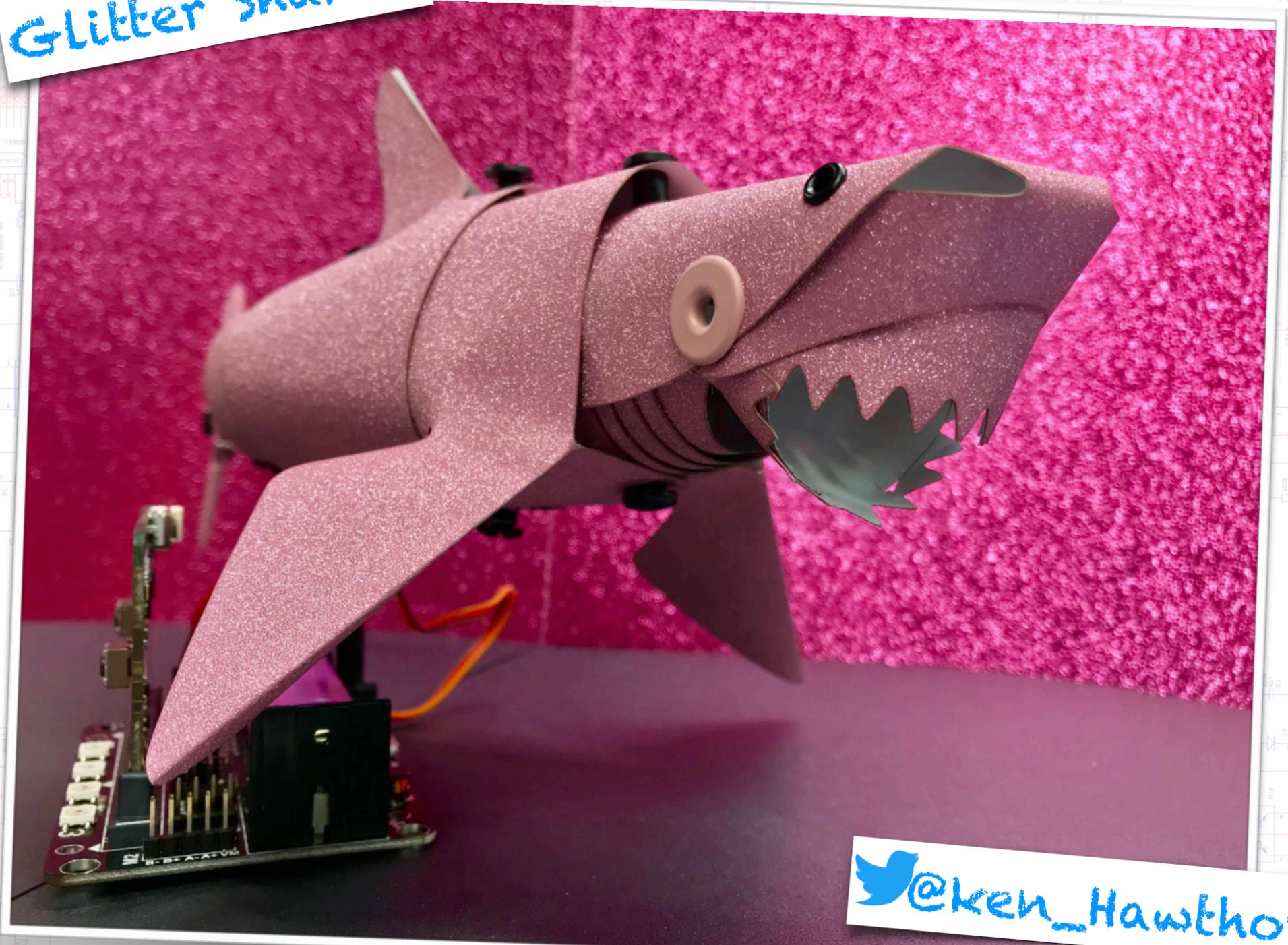
### Projects

I get a lot of energy building personal projects that make me smile. Wherever I am in my career I need to spend some time building things that make me smile.

# Awaking Makers

At St. Raymond, and in my PD work, I develop new projects each week that combine chassis design, electronics and coding. I am a *Maker Awaker*. My job is to first get students and teachers engaged in a project with lessons that draw from fields not traditionally considered “technical” and inviting them to take control and ownership over the exact shape of the project. Projects I develop are often anthropomorphic and cross into art, biology and literature. The most engaging projects are those that the students name and we collaboratively design within cost and time constraints. What I am actually presenting to students and teachers are simply new tools and techniques to accomplish the building of the machines *they think should exist*. People of all ages wake up to call themselves Makers when they end up smiling and laughing while picking up new tools and techniques. The animatronic Glitter Shark pictured below is a great example of the kind of lesson I enjoy developing from student ideas while tying a broad range of skills into the build experience.

Glitter Shark!



@ken\_Hawthorn