

Social Wearables Toolkit for Edu-Larp ‘Camp-in-a-Box’

JAMES FEY, University of California Santa Cruz, USA

ELLA DAGAN, University of California Santa Cruz, USA

KATHERINE ISBISTER, University of California Santa Cruz, USA



Fig. 1. Images from the our kit wearable prototypes implementation in one of the camps

The wearables toolkit we would discuss in the workshop is part of our ongoing research program focused on the creation of social wearables (i.e., wearables to augment in-person social interaction [1, 2]). We have been combining the creation of wearables with the collaborative and immersive experience of live action role play (larp) in an educational larp camp experience that we have developed, and have already run in two different communities (see Fig. 1). In the longer term, we plan to package this as a ‘camp-in-a-box’. Our goal in designing this camp is to contribute to increasing the interest of middle-school-aged girls in making and technology, with an additional focus on girls from under-served socio-economic situations and diverse backgrounds who are frequently left out of STEM education efforts.

Here we share the work-in-progress of a toolkit we are preparing to help future camp facilitators run and execute the edu-larp camp, in which campers build social wearable technology for their in-game characters. The kit is a combination of a narrative frame, structured design activities and in-character missions, hardware and crafting material recommendations, as well as tutorials for both electronics and design implementations.

The audience for the toolkit is the camps’ facilitators, and to some extent, also the campers who will be using the materials provided in the kit to design and develop their prototypes during the camp. We have explored hardware and IDE options, and chose the BBC Micro:Bit/MakeCode prototyping ecosystem. Each camper receives an initial hardware kit that includes a 20 Neopixel LEDs Dots Strand, and an external battery pack. This prototype kit has the advantage of zero-soldering fabrication, making use of bolt-on JST connectors, and a robust LED form factor that could easily wrap around the body.

We began developing the kit by hosting remote youth advisory committee workshop sessions where we tested our initial ideas. Then we evaluated it in the first two runs of the camp, and are still in the process of iterating and improving it. In our past two deployments of the camp we have found the kit has allowed campers to rapidly iterate their character costumes and incorporate skills and features as they are introduced to them. The campers have shown a high degree of engagement in making and increased interest in further STEM learning.

In addition to the technical elements in the kit, we provide a list of crafting materials to explore. We also include, as part of the kit, coding and tangible+embodied design exercises to facilitate the use of the kit. We are in the process of developing ‘design cards’ to accompany the kit as well. We would love to share more details about our kit, and reflect and discuss with other at the wearable toolkit workshop at CHI 2022 in New Orleans.

REFERENCES

- [1] Ella Dagan, Elena Márquez Segura, Ferran Altarriba Bertran, Miguel Flores, Robb Mitchell, and Katherine Isbister. 2019. Design Framework for Social Wearables. In *Proceedings of the 2019 on Designing Interactive Systems Conference (San Diego, CA, USA) (DIS '19)*. ACM, New York, NY, USA, 1001–1015. <https://doi.org/10.1145/3322276.3322291>
- [2] Elena Márquez Segura, James Fey, Ella Dagan, Samvid Niravbhai Jhaveri, Jared Pettitt, Miguel Flores, and Katherine Isbister. 2018. Designing Future Social Wearables with Live Action Role Play (Larp) Designers. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (Montreal QC, Canada) (CHI '18)*. ACM, New York, NY, USA, Article 462, 14 pages. <https://doi.org/10.1145/3173574.3174036>

ACKNOWLEDGMENTS

2020 Recipient of an NSF Advancing Informal STEM Learning (AISL) Award.