Fereshteh Toosi
Assistant Professor, Art and Art History

Traditionally, the Art department's digital studio track has trained students in multimedia production with Adobe software like Photoshop. While the use of this software is useful, the tools remain opaque. As software users, media artists are rarely asked to engage in a meaningful critical analysis of how the tools of production influence the media landscape for which they hope to create content.

Safiya Noble, author of *Algorithms of Opression* writes: "Knowledge of the technical aspects of search and retrieval, in terms of critiquing the computer programming code that underlies the systems, is absolutely necessary to have a profound impact on these systems" (2018, 26). In response to the need for more significant type of digital literacy, my undergraduate Digital Art Lab course is shifting in a direction that enables students to engage in a deeper conceptual understanding of computation, specifically code, as a tool for creative research.

This presentation will introduce the audience to critical code studies and the concept of poetic computation. which are the theoretical foundations for my Digital Art Lab course.

The specific tools I have introduced in this course include: web development with HTML and CSS, gaming and animation with Javascript, and physical computing with electronics using Arduino.

Additionally, students have subverted some of the Knight Lab JS tools to create experimental self-portaits and fictional pieces, traced the history of a meme using digital mapping, and participated in a Wikipedia Edit-a-thon that I organized with an anti-opression framework.

I have benefited from working with the Digital Humanities librarians at FIU and I am pursuing other connections on campus. I was emboldened to make this shift in my teaching by my collaboration with engineer Hannah Perner-Wilson. Hannah works at the intersection of textile and electronics technology, producing wearable interfaces such as Imogen Heap's Mimu gloves that allow musicians to compose and perform computer music with hand gestures. Together we are working on a performance to engage audiences in questioning the (hi)stories upon which technological achievements are built. The narrative of the maker movement often focuses on empowerment and creative expression. What is the missing information, and how can we make it part of a material practice?

Computer programmers often work in pairs which enforces collaborative problem solving and enforces the lesson that mistakes are expected and in fact, welcome. Pair programming also allows the social space of computational work to flourish.

I'd like to see more of this practiced in our digital humanities teaching and research, but how? Ideally, I would be teaching my Digital Art Lab course as a team in collaboration with a scientist, and I still hope to do so someday. I want to encourage humanitarians to engage more deeply with the science of computation, especially in the realm of DIY practices, FOSS free open source software, and independent science labs.