

Introductory courses for CS+X

The rough topics that were covered in “Summer Data Salon” ran at the Fashion Institute of Technology (FIT) in summer 2020 is as follows:

Please contact Maria Hwang (maria_hwang@fitnyc.edu) if you have further questions regarding the Summer Data Salon.

Week 1	06/11	Introduction + Assignment of a scientific research article (involving a fashion machine learning algorithm) following questions and a reading guideline;
Week 2	06/18	Discussing the assigned scientific research article + Introduction to web devp and Github, Assignment of Code Academy (Learn Python 2, up to lists and dictionaries);
Week 3	06/25	Short demo and discussion of CSS grid, Sass, and other frameworks and libraries for web development + Sorting activity with a deck of cards + Assignment of Code Academy (Learn Python 2, up to chapter 10);
Week 4	07/02	UI/UX activity (re-design a clothing tag) in relation to design principles (also to be applied to the students’ web devp project); + Webscraping via Python and Colab
Week 5	07/09	Machine Learning algorithms (e.g., SVM) using Python and Google Colab
Week 6	07/16	Using MNIST fashion data with classification algorithms via TensorFlow and Colab
Week 7	07/23	Student led activities (Image Classifier Algorithms + Convolutional Neural Network)
Week 8	07/30	Student led activities (Merchandising and Retail + Data Analytics + Customer Churning)
Week 9	08/06	Materials Science and Ownership of Data in the 21st Century -- activity led by a Material Science Professor at FIT
Week 10	08/13	Discussion on the future of data, CS, DS in the fashion industry and retail
Week 11	08/20	Wrap up, present my website, present one final research article with a summary of the research questions and solutions provided.

Some of the common challenges for introductory CS+X courses:

- The bridge or connection between a classic CS activity and the expert domain area (X). In the “Summer Data Salon” the sorting activity with cards was the least popular topic as students didn’t

really see how that activity connected to their expertise in fashion.

- One thing to keep in mind with these courses is that they might have to be targeted towards **upper class students (juniors and seniors)** so they can be the experts for the “+X” portion, if you do not have a colleague to teach the +X portion.
- One might need a significant CS foundation before you can actually start using it in conjunction with another topic (X). So even if a class was mainly focusing on CS + Fashion, there would have to be a few classes at least of just CS to get started.
- In order for people to understand the amazing benefits of CS + X courses (and overcome their fear of the perceived difficulty related to the word coding) there would have to [be] some initial exposure somehow before actually registering for the course. Either in advertising for the course in other (mandatory) courses or through info sessions/workshops of some kind.
- Levels of abstraction: students often are mere consumers of technologies and therefore we struggle to find out how many levels of abstraction one needs to go to get the students started on the “path to CS” (related to the invisible curriculum in CS)
- How much CS is enough to “count” as CS?
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