

Syllabus:

Week 1: Introduction: why take this subject; who am I; what have I worked on related; why now; **goals of class**

Week 2: Fairness 101: optimize for fairness; hyperparameters (**more focus on what these are**); fairness vs performance; **fairness metrics and what they need**; ~~maybe ways around it: epsilon domination & FFT~~; **Homework section: epsilon domination, distance**

Week 3: Less Data: how is data used, why would we want to use less, how can we do so to good effect; **FFT trees**; Homework section: ~~distance~~; projections

Week 4: Discretize: how and why of discretization; Focus on FFT application; Homework section: discretization

Week 5: Homework section: more discretization

Week 6: Ethical, Understandable, Auditable: Explainability (**more focus here**); hyperparameter **review**; hyperparameter optimization; Timm's Rule & FFT + **FFT review**; beginning of stats discussion

Week 7&8: Stats discussion; Homework section: hyperparameters

Week 9: Explainability and Ethics: different ductions; different learners; **Project focus**

Week 10: Fairness: what are the metrics and how do they work?; **Project focus**

Week 11: Work so far: PUT theory; FairCart; **Fair-SMOTE**; others; **Project focus**

Week 12: More work so far; **Project focus**

Week 13: Presentations

I think I may be missing a week somewhere.

I'm not sure that I love the juxtaposition of the focus on ethics in the lectures with the FFTs in the homeworks. There was early discussion about how FFT trees help with fairness and removal of data, but it seemed as though the homeworks were pretty unconnected with the class.

That said, I'm not sure exactly what to replace them with. I appreciated the hands-on experience, I enjoyed many of the exercises, and I feel like I understood FFT trees and hyperparameters more than I otherwise would have. Perhaps a series of exercises trying out different methods, to be able to compare the fairness and performance of different mitigators or lack thereof? With a few extra questions to ensure

All in all, I think a little bit more focus on direction for the project would be good. I felt that, essentially having never interacted with machine learning or the ethics thereof before this class, it was difficult to come up with an interesting and impactful project which I could do in a month, especially with the (probably well placed) focus on making it like a publishable paper.