Resources for a Critical Machine Learning

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Machine Learning

“Reverse engineering”* data for…

- pattern detection
- prediction
- decision making

Deals with large & complex data.

*Tseng, 2016

Exciting possibilities

- Face recognition
- Music recommendation
- Translation
- …
- Self-driving cars
- Medical & biological studies

Social & political challenges

- Biases
  - Training
  - Data source
  - Representation
- Opacity*
  - intentional corporate or state secrecy
  - technical illiteracy
  - a result of the characteristics of ML algorithms themselves

*Burrell, 2016

Educational resources

Technical / CS-focused

- Coursera
- Udacity
- Kaggle (Competition platform for Data Science)
- Lists of resources
  - https://github.com/ZuzooVn/machine-learning-for-software-engineers
  - https://medium.com/machine-learnings/a-humans-guide-to-machine-learning-e179f43b67a0#.55o46t3tv

Technical resources that target specific fields

- The Programming Historian
- ML4A
- Machine Learning for Musicians and Artists

Critical discourse

- Scholarly Journals
- Journalism
- The Social Media Collective (SMC)'s Critical Algorithm Studies: a Reading List
- Data&Society's links page
- Conferences & other events

I want to bridge these resources!

Critical Machine Learning

- Help familiarize with concepts and assumptions of ML
- Think critically about its implications

Cited Works

- Burrell, Jenna. "How the machine ‘thinks’: Understanding opacity in machine learning algorithms." *Big Data & Society* 3, no. 1 (2016): 2053951715622512.
- Tseng, Francis. “Machine Learning 101” workshop material. https://github.com/frnsys/ml101