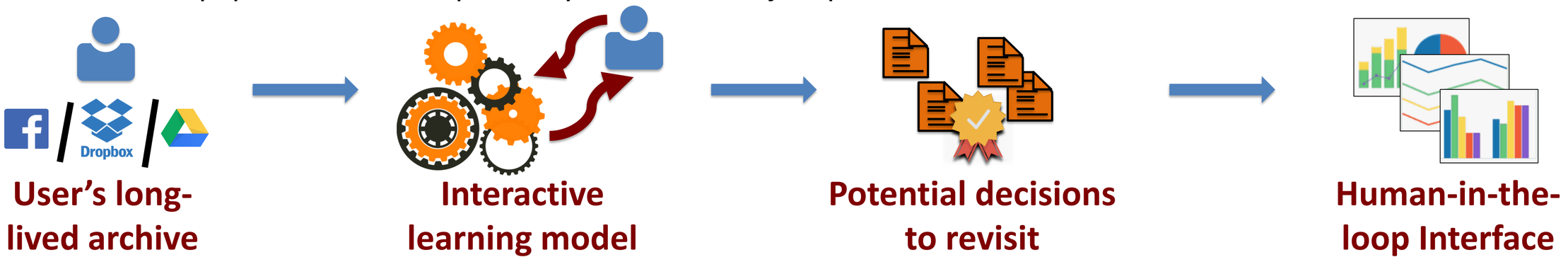
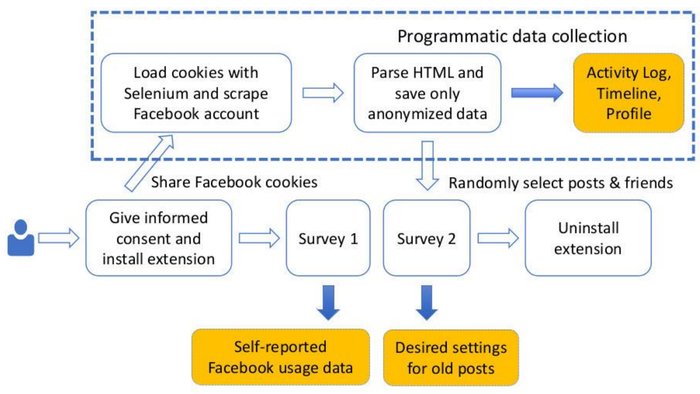
Enabling Long-Term Security and Privacy through Retrospective Data Management

Chris Kanich (University of Illinois at Chicago)
Elena Zheleva (University of Illinois at Chicago)
Blase Ur (University of Chicago)

- Access control settings and online privacy settings are “set it and forget it”
  - Goal: Equip users to retrospectively revisit and adjust past decisions in a usable and scalable manner

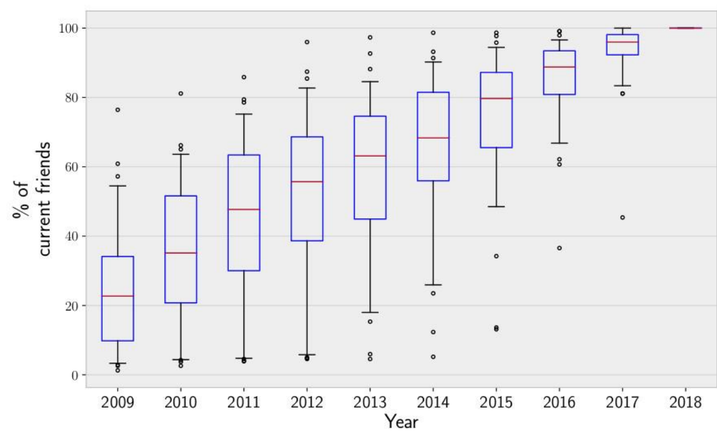


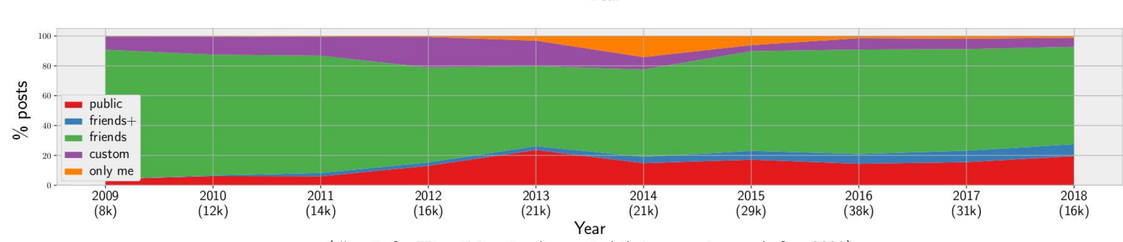
- Key challenges:
  - Minimal work on security/privacy over time
  - Retrospective/longitudinal data hard to collect
  - Not obvious what features are predictive
- User study of 78 Facebook users
  - Survey + Facebook timeline + activity log



Year 1 Scientific Impact (1/2):

- Measurement of privacy settings over time

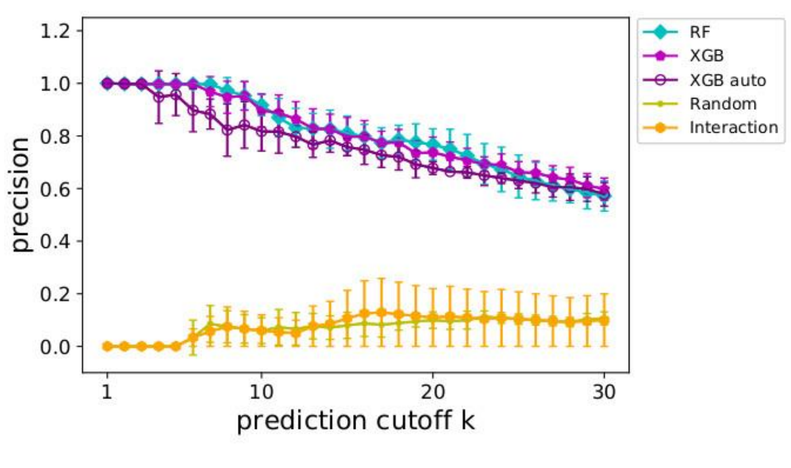


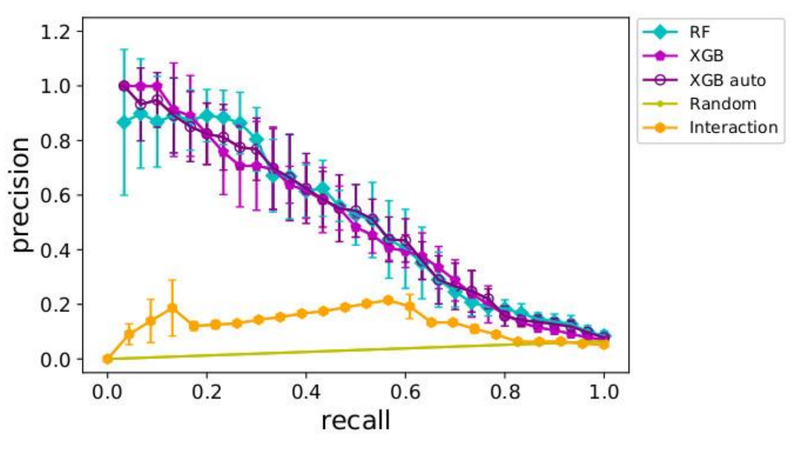


(#posts for 55 participants who created their account on or before 2009)

Year 1 Scientific Impact (2/2):

- Creation of classifiers
  - Friend-post pairs
  - Post features matter
  - Friend features matter





Broader Impact on Society

- Social media and cloud storage widely used
- Support retrospective reevaluation of security and privacy settings
- Build human-in-the-loop security and privacy tools

Broader Impact on Education

- Undergraduate research (Three undergrad authors on CCS 2019 paper)
- Undergrad-led project in submission
- Postdoctoral researcher on project now faculty

Broader Impact Quantification

- The number of users of retrospective security and privacy tools we will build
- The size of the longitudinal dataset we will build and the # of researchers using it

Mainack Mondal, Günce Su Yılmaz, Noah Hirsch, Mohammad Taha Khan, Michael Tang, Christopher Tran, Chris Kanich, Blase Ur, Elena Zheleva. Moving Beyond Set-It-And-Forget-It Privacy Settings on Social Media. In *Proceedings of the 26th ACM Conference on Computer and Communications Security (CCS)*, 2019.