

Look before you Link: Privacy Risk Inspection of Open Data through a Visual Analytic Workflow

Kaustav Bhattacharjee, Ph.D. Candidate
kb526@njit.edu

Advisor:
Aritra Dasgupta, Assistant Professor
aritra.dasgupta@njit.edu

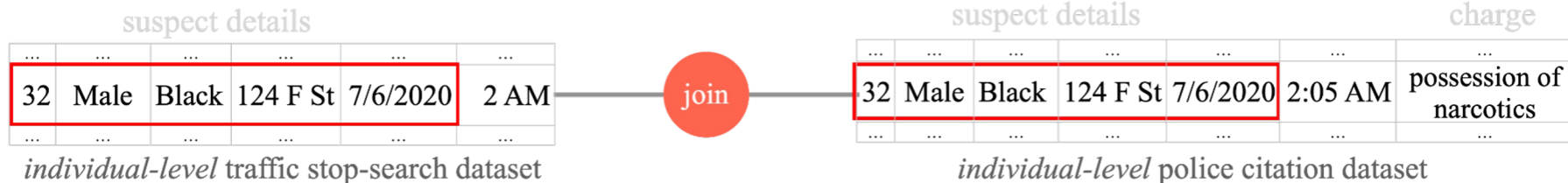
niiv.njitvis.com



Symposium on Usable Privacy and Security (SOUPS 2023)

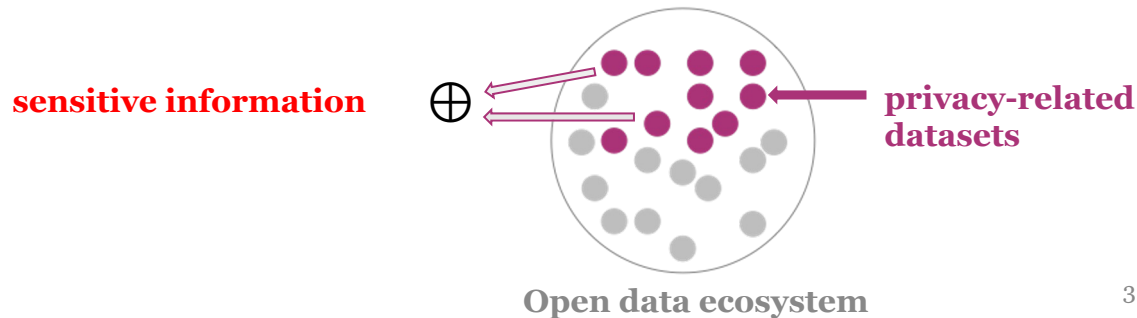


Open data, even after anonymized, are vulnerable to **disclosure risks!**

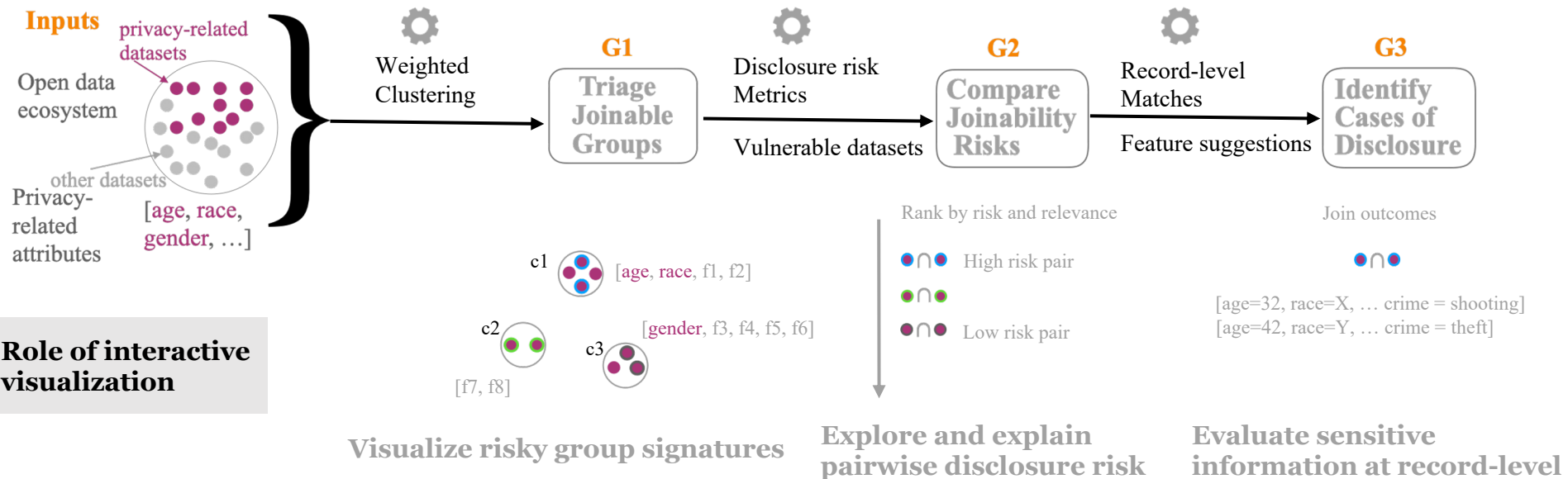


Key Contributions

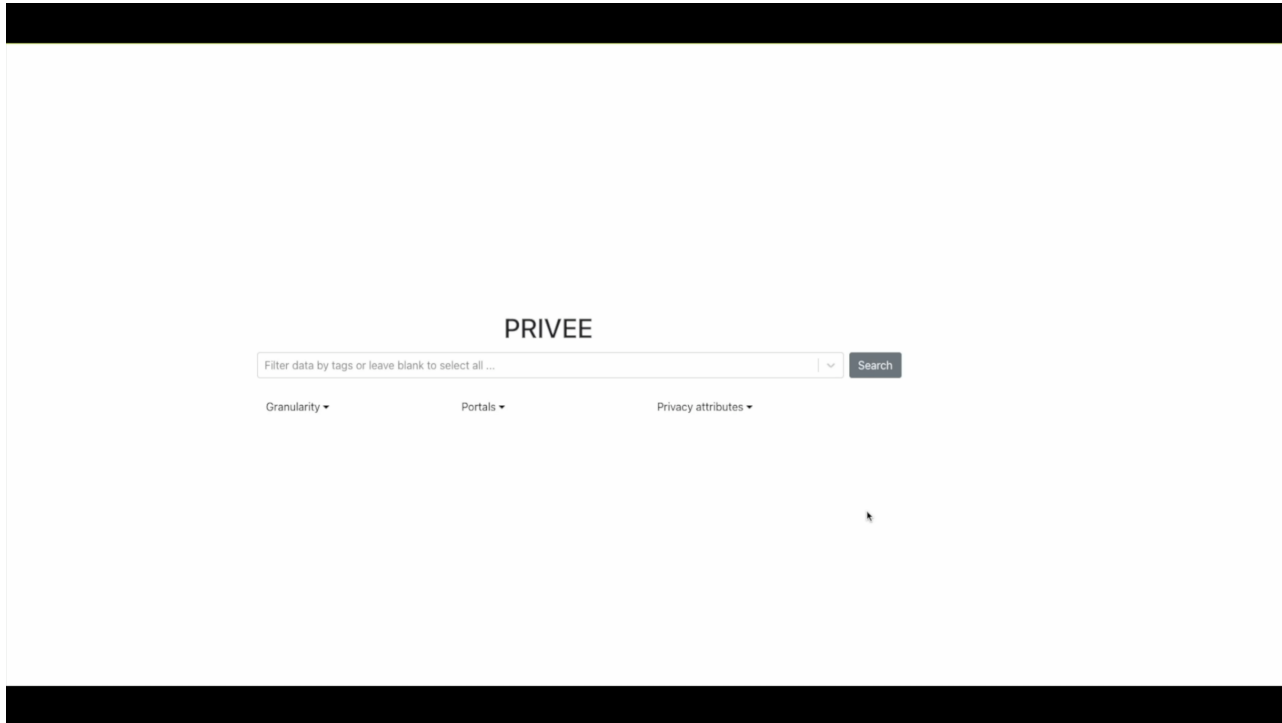
- Conducted red teaming exercise, report some of the disclosure examples and understand the possible attack scenarios into the open data ecosystem
- Developed a visual analytic tool PRIVÉE to analyze the open datasets for further disclosures



Visual Analytic Interventions in PRIVÉE



PRIVEE Interface demonstration



Link: https://youtu.be/61BmGHceC_s

Future work

- Explore joinability risks beyond a pair of datasets
- Increase on the number of datasets available along with the increase in the computation power
- Understand privacy risk from the data subjects' perspective
- Evaluate the impact of PRIVÉE with data custodians and cyber defenders

Publications

- [PRIVEE: A Visual Analytic Workflow for Proactive Privacy Risk Inspection of Open Data \(VizSec 2022\)](#) [1]

[1] Bhattacharjee, Kaustav, Akm Islam, Jaideep Vaidya, and Aritra Dasgupta. "PRIVEE: A visual analytic workflow for proactive privacy risk inspection of open data." In 2022 IEEE Symposium on Visualization for Cyber Security (VizSec), pp. 1-11. IEEE, 2022.

- [Power to the Data Defenders: Human-Centered Disclosure Risk Calibration of Open Data \(USEC 2023\)](#) [2]

[2] Bhattacharjee, Kaustav, and Aritra Dasgupta. "Power to the Data Defenders: Human-Centered Disclosure Risk Calibration of Open Data." 2023 Symposium on Usable Security and Privacy (USEC)(2023), doi: <https://dx.doi.org/10.14722/usec.2023.237256>.

Look before you Link: Privacy Risk Inspection of Open Data through a Visual Analytic Workflow

Thank You!

**Looking forward to collaborating with experts from the
privacy and cyber security communities**

Kaustav Bhattacharjee
Aritra Dasgupta

kb526@njit.edu
aritra.dasgupta@njit.edu

@me_kebby
@aedegee

kaustavbhattacharjee.com

niiv.njitvis.com

aedegee.github.io



New Jersey Institute of Technology