

Yash Vekaria

Research Interests

Cybersecurity & Web Privacy; Digital Advertising Ecosystem; Ad-fraud; Ad-targeting; Large-scale Internet Measurements; Web Tracking; Online Misinformation; Applied Machine Learning.

Education

- 2021–Present **Ph.D. in Computer Science** 3.95/4.00
University of California, Davis
- 2016–20 **B.Tech. in Computer Science** 9.04/10.00
The LNM Institute of Information Technology (LNMIIT), India.

Publications

- IEEE S&P 2024 **The Inventory is Dark and Full of Misinformation: Understanding the Abuse of Ad Inventory Pooling in the Ad-Tech Supply Chain**
Yash Vekaria, Rishab Nithyanand, Zubair Shafiq
IEEE Symposium on Security & Privacy (Oakland), 2024
Acceptance rate: 21.3% (49/230)
- 2023 **Before Blue Birds Became X-tinct: Understanding the Effect of Regime Change on Twitter's Advertising and Compliance of Advertising Policies**
Yash Vekaria, Zubair Shafiq, Savvas Zannettou
Under Submission, 2023
- WebSci 2021 **Differential Tracking Across Topical Webpages of Indian News Media**
Yash Vekaria*, Vibhor Agarwal*, Pushkal Agarwal, Sangeeta Mahapatra, Sakthi Balan Muthiah, Nishanth Sastry, Nicolas Kourtellis (*first co-authors)
13th ACM Web Science Conference, 2021
- ICWSM 2021 **Under the Spotlight: Web Tracking in Indian Partisan News Websites**
Vibhor Agarwal*, **Yash Vekaria***, Pushkal Agarwal, Sangeeta Mahapatra, Sakthi Balan Muthiah, Nishanth Sastry, Nicolas Kourtellis (*first co-authors)
15th International AAAI Conference on Web and Social Media (ICWSM), 2021
Acceptance rate: 22.4% (30/134)
- RCIS 2021 **A Metadata-based Event Detection Method using Temporal Herding Factor and Social Synchrony on Twitter Data**
Nirmal Kumar Sivaraman, Vibhor Agarwal, **Yash Vekaria**, Sakthi Balan Muthiah
15th International Conference on Research Challenges in Information Science (RCIS), 2021

Ongoing Research Projects

- Understanding Effective Notifications for Reducing Potential Ad-fraud Vulnerabilities
- Studying Cross-device Tracking and Ad Targeting in Smart TVs and Smart Medical Devices
- Towards Detecting and Blocking Privacy Invasive Pixel Tracking
- Ad-Sprinter: Developing Effective and Performant Large-scale Ad Crawling Infrastructure

Experiences

- Sep 2021 – **University of California, Davis** **Davis, USA**
Present *Research Assistant, Breakerspace Lab,*
Advisor: Prof. Zubair Shafiq
Research focus is towards investigating and improving security, privacy, and transparency issues in the online tracking and advertising ecosystem through internet measurements.
- Summer 2022 **Max Planck Institute für Informatics** **Saarbrücken, Germany**
Visiting Research Fellow, Internet Architecture Group (INET),
Advisor: Prof. Savvas Zannettou
Research project aimed at detecting and studying the problematic advertising on Twitter to understand the compliance and violations of its advertising policies, problematic advertiser practices and effectiveness of Twitter's ad moderation strategies.
- Jan 2020 – **Innovaccer** **Noida, India**
Aug 2021 *Data Scientist*
 - Built *ML* and *DL* models and performed *statistical data analysis* on healthcare data to improve cost and harm minimization for patients (like reduction of unnecessary imaging).
 - Worked on *healthcare data analytics*, dashboard building and data insights generation for 2 USA clientele ACO projects: *Orlando Health* (Florida) and *Dignity Health* (California).
 - Developed *automations* to streamline repetitive tasks like converting measure definition JSON files to SQL queries.
- Summer 2019 **Innovaccer** **Noida, India**
Decision Science Intern
 - Improved Innovaccer's data model by *optimizing* PostgreSQL queries, thereby reducing the overall execution time from 10 hours to 3 hours.
 - Used *ML* to predict patient in-hospital revisits after discharge.

Honors & Awards

- 2023 **Cybersecurity Summer Fellow** *Georgia Tech, USA*
One of the 20 fellows selected from across the globe.
- 2016–2018 **Merit Scholarships** *The LNM Institute of Information Technology, India*
Awarded to Top 5% students based on GPA.
- 2019, 2021 **Spot Awards** *Innovaccer, India*
Two quarterly spot awards received: One for efficient optimization of data model from 10 hrs to 3 hrs. Second for minimizing patient costs.

Teaching

- Spring 2022 **Computer Networks (ECS 152A)** *Teaching Assistant*
University of California, Davis, USA
- Spring 2019 **Data Structures & Algorithms** *Teaching Assistant*
The LNM Institute of Information Technology, India
- Fall 2018 **Computer Organization & Architecture** *Teaching Assistant*
The LNM Institute of Information Technology, India
- Fall 2017 **Computer Programming** *Teaching Assistant*
The LNM Institute of Information Technology, India

Skills

- General *Network Measurements, Computational Social Science, Data Science, Data Analytics, Data Visualization, Machine Learning, Deep Learning, Data & Text Processing, Natural Language Processing, Image Processing, Web Crawling*
- Languages *Python, C, C++, Python Libraries (Pandas, Numpy, Matplotlib, Scipy, PyTorch, OpenCV, Selenium, BeautifulSoup), SQL/PostgreSQL, HTML, Javascript*

Tools *Docker, Git/GitHub, LaTeX*

Leadership

Spring 2023 **E-PRIME Mentor** *UC Davis*

Mentored undergraduate students on research project as part of the E-PRIME (Education Partnership in Research, Inclusion and Mentoring Experiences) Mentorship Program.

Services

2024 **Artifact Evaluation Committee Member**

Privacy Enhancing Technologies Symposium (PETS)

Network and Distributed System Security Symposium (NDSS)

2023 **Program Committee Member**

ACM Workshop on Artificial Intelligence and Security (AISec)

ACM Conference on Fairness, Accountability, and Transparency (FAccT)

ACM Web Science Conference (WebSci)

IEEE Conference on Sensing, Communication, and Networking (SECON)

2023 **Artifact Evaluation Committee Member**

IEEE Workshop on Offensive Technologies (WOOT)

Travel Grants

2023 *ACM IMC, ACM SIGMETRICS*

2022 *PETS, ACM WiSec*

2021 *IEEE S&P (Oakland) (Virtual), IEEE CSF (Virtual)*

Invited Talks

May 2023 **Be Aware: Dark Pooling Uncovered**

AdExchanger's Programmatic I/O, MGM Las Vegas

Jul 2021 **Differential Tracking Across Topical Webpages of Indian News Media**

CMLBDA, The LNM Institute of Information Technology, India

Media Coverage

Sep 2023 **Elon Musk's X is ignoring its own ad policies, a new study finds**

[Fast Company](#) article by *Chris Stokel-Walker*

Mar 2021 **Tracking the Trackers**

[Open \(The Magazine\)](#) article by *Ullekh NP*

References

Prof. Zubair Shafiq

Associate Professor, University of California, Davis

Email: zshafiq@ucdavis.edu

Webpage: <https://web.cs.ucdavis.edu/~zubair/>

Prof. Rishab Nithyanand

Assistant Professor, University of Iowa, Iowa

Email: rishab-nithyanand@uiowa.edu

Webpage: <https://sparta.cs.uiowa.edu/people/rishab/>

Prof. Savvas Zannettou

Assistant Professor, TU Delft, Netherlands

Email: s.zannettou@tudelft.nl

Webpage: <https://zsavvas.github.io>