Dhruv Kuchhal

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Google Scholar

RESEARCH INTERESTS

I'm interested in working on real-world computer security and privacy problems, often involving measuring, analyzing and understanding large-scale data. Most recently, I have focused on web security and privacy.

EDUCATION

- **Georgia Institute of Technology** — Atlanta, GA
  Doctor of Philosophy in Computer Science — *Aug 2019 – Dec 2023 (expected)*

- **Guru Gobind Singh Indraprastha University** — Delhi, India
  Bachelor of Technology in Information Technology — *2014 – 2018*

SELECTED PUBLICATIONS

CONFERENCE

- **Kuchhal, D.**, Saad, M., Oest, A., and Li, F.,
  The Pitfalls of Real-World FIDO2 Deployments: Evaluating, Attacking, and Hardening Passwordless Authentication.
  Currently under review.

- **Kuchhal, D.** and Li, F.,
  A View into YouTube View Fraud.
  ACM Web Conference (**WWW**), 2022.
  Acceptance Rate: 17.7% (323/1822) [dl.acm.org] [pdf] [video]

- **Kuchhal, D.** and Li, F.,
  Knock and Talk: Investigating Local Network Communications on Websites.
  ACM Internet Measurement Conference (**IMC**), 2021.
  Acceptance Rate: 27% (53/196) [dl.acm.org] [pdf] [video]

- Redmiles, E.M., Maszkiewicz, L., Hwang E., **Kuchhal, D.**, Liu, E., Morales, M., Peskov, D., Rao, S., Stevens, R., Gligorić, K., Kross, K., Mazurek, M.L., Daume III, H.,
  Comparing and Developing Tools to Measure the Readability of Domain-Specific Texts.
  Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2019.
  Acceptance Rate: 23.8% (684/2877) [aclweb.org] [pdf]

- Redmiles, E.M., Zhu, Z., Kross, S., **Kuchhal, D.**, Dumitras, T. and Mazurek, M.L.,
  Asking for a Friend: Evaluating Response Biases in Security User Studies.
  ACM Conference on Computer and Communications Security (**CCS**), 2018.
  Acceptance Rate: 16% (134/809) [dl.acm.org] [pdf] [video]

- Gupta, S., **Kuchhal, D.**, Gupta, P., Ahamad, M., Gupta, M. and Kumaraguru, P.,
  Under the Shadow of Sunshine: Characterizing Spam Campaigns Abusing Phone Numbers Across Online Social Networks*.
  ACM Conference on Web Science (**WebSci**), 2018.
  Acceptance Rate: 27% (30/113) [dl.acm.org] [pdf]
  ***Award:* Runner up for Best Student Paper**

JOURNAL

- Gupta, S., Bhatia, G., Suri, S., **Kuchhal, D.**, Gupta, P., Ahamad, M., Gupta, M. and Kumaraguru, P.,
  Angel or Demon? Characterizing Variations Across Twitter Timeline of Technical Support Campaigners.
  The Journal Of Web Science, 2019 [webscience-journal.net] [pdf]

Experience

- **PayPal, Inc.** — Scottsdale, AZ
  Information Security PhD Intern — *Summers of 2021 & 2022*
  - **Managers**: Dr. Adam Oest and Dr. RC Johnson.
  - **Work**: Exploring deployment efficacy of passwordless authentication (FIDO2).
  - **Ecosystem Impact**: Reported a bug in Google Chrome that could be exploited to trick a user enrolled in WebAuthn into authenticating an attacker-controlled sensitive action on their account. [Chromium Issue 1341134]

- **Georgia Institute of Technology (Georgia Tech)** — Atlanta, GA
  Graduate Research Assistant — *2020 - present*
  - **Area**: Empirical Measurement, Security and Privacy.
  - **Advisor**: Prof. Frank Li.
  - **Projects**:
    * Investigating local network communications on websites.
    * Investigating the YouTube view fraud ecosystem.

- **University of Maryland (UMD)** — College Park, MD
  Research Assistant at Security, Privacy, People Lab (SP2) — *2017 - 2018*
  - **Area**: Usable Privacy and Security.
  - **Advisors**: Prof. Michelle Mazurek and Prof. Elissa Redmiles.
  - **Projects**:
    * Measuring and improving readability of security advice.
    * Evaluating response biases in security user studies.

- **Indraprastha Institute of Information Technology, Delhi (IIIT-D)** — Delhi, India
  Undergraduate Researcher and Research Associate at PreCog Research Lab — *2017 - 2019*
  - **Area**: Social Computing - Security and Privacy on Online Social Networks (OSNs).
  - **Advisor**: Prof. Ponnurangam Kumaraguru (now moved to IIIT-Hyderabad).
  - **Projects**:
    * Detecting cross-platform spam on online social networks.
    * Detecting and mitigating misinformation on WhatsApp.[technical details, press]

Relevant Graduate Coursework

Computer Networks, Network Security, Empirical Measurement/Security, Secure Computer Systems, Malware Reverse Engineering, Machine Learning, Deep Learning, Graduate Algorithms and Applied Cryptography.

Teaching

- **CS6262 - Network Security, 2020**: TA with Prof. Wenke Lee. Redesigned the Network Monitoring project.
- **CS6035 - Information Security, 2022**: TA with Prof. Paul Pearce and Prof. Daniel Genkin.

Achievements/Honors

- **USC Annenberg Fellowship, 2019**: Received a 4-year fellowship of USD 34k/yr to pursue a PhD in CS at USC.
- **Smart India Hackathon, 2017**: Our team of 6 members advised by Dr. Sambuddha Roy won the first prize at India's national hackathon (10k+ students), with a cash prize of Rs. 1 lakh awarded by Government of India. [GitHub]
- **Recognition of Service Award from ACM, 2016**: Founding Chair for ACM-MAIT Student Chapter.

Service

- **PETS**: External reviewer, PETS 2022-23. Publication co-chair, PETS 2023-24.
- **Georgia Tech School of Cybersecurity and Privacy**: Member, Faculty Recruiting Committee, 2022.
- **Georgia Tech Student Employee Advisory Board**: Board Member, 2021-22 AY.
- **Georgia Tech School of Computer Science**: Founding Communications Chair of GSA, 2021-22 AY.
- **India Club at Georgia Tech**: Board member, 2020-21 AY.