Dhruv Kuchhal

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Senior Research Scientist at PayPal

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Google Scholar

CURRENT INTERESTS

As part of the Advanced Threats Group, I work on developing proactive fraud defense for PayPal products.

EDUCATION

- **Georgia Institute of Technology** — Atlanta, GA
  Doctor of Philosophy in Computer Science. Advised by Prof. Frank Li. — *2019 – 2023*

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

SELECTED PUBLICATIONS

CONFERENCE

- **Kuchhal, D.**, Ramakrishnan, K., and Li, F.,
  Whatcha Lookin' At: Investigating Third-Party Web Content in Popular Android Apps.
  Currently under review.

- **Kuchhal, D.**, Saad, M., Oest, A., and Li, F.,
  Evaluating the Security Posture of Real-World FIDO2 Deployments.
  ACM Conference on Computer and Communications Security (**CCS**), 2023.
  Acceptance Rate: 19.8% (158/795) [pdf]

- **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]

Prior Work Experience

- **PayPal, Inc.**   Scottsdale, AZ
  Information Security PhD Intern   *Summers of 2021 & 2022*
    - **Managers**: Dr. Adam Oest and Dr. RC Johnson.
    - **Work**: Studied real-world attacks and defenses of FIDO2-based passwordless authentication.
    - **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]

- **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

- **CS6035 - Information Security, 2022**: TA with Prof. Paul Pearce and Prof. Daniel Genkin.

- **CS6262 - Network Security, 2020**: TA with Prof. Wenke Lee. Redesigned the Network Monitoring project.

Achievements/Honors

- **RSAC Security Scholar 2023**: Selected among 50 cybersecurity students across US to attend the RSA Conference.

- **Conference Travel Grants**: Awarded funds to travel to and attend ACM CCS 2018 and PETS 2022.

- **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 - ACM, 2016**: For serving as founding Chair for ACM-MAIT Student Chapter.

Service

- **PETS**: External reviewer, 2022-2023. Publication co-chair, 2023-2024. PC Member, 2024.

- **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.