

Rahul Chatterjee

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| CURRENT POSITION | Assistant Professor , Computer Sciences, University of Wisconsin–Madison. |
| RESEARCH INTERESTS | Computer security and privacy: Building provably secure systems that are usable and human friendly. Interests include passwords, biometrics, digital safety, applied cryptography, and privacy. |
| EDUCATION | Cornell University Ithaca, NY PhD, Computer Science August 2015 - August 2019 Advisor: Thomas Ristenpart Thesis: “Next Generation Password-Based Authentication Systems” University of Wisconsin–Madison Madison, WI Masters, Computer Sciences August 2013 - May 2015 Indian Institute of Technology, Kharagpur Kharagpur, West Bengal Bachelor of Technology, Computer Science and Engineering July 2008 - June 2012 Advisor: Sudeshna Sarkar Thesis: “Sentence Fluency Improvement using Monolingual Corpus” |
| SELECTED PUBLICATIONS | <ol style="list-style-type: none">[1] <u>Rahul Chatterjee</u>, M. Sadegh Riazi, Tanmoy Chowdhury, Emanuela Marasco, Farinaz Koushanfar, Ari Juels. “Multisketches: Practical Secure Sketches Using Off-the-Shelf Biometric Matching Algorithms.” <i>ACM CCS, 2019</i> (Acceptance rate: 17%)[2] Lucy Li, Bijeeta Pal, Junade Ali, Nick Sullivan, <u>Rahul Chatterjee</u>, Thomas Ristenpart. “Protocols for Checking Compromised Credentials.” <i>ACM CCS, 2019</i> (Acceptance rate: 17%)[3] Diana Freed, Sam Havron, Emily Tseng, Andrea Gallardo, <u>Rahul Chatterjee</u>, Thomas Ristenpart, Nicola Dell. ““Is my phone hacked?” Analyzing Clinical Computer Security Interventions with Survivors of Intimate Partner Violence.” <i>ACM CSCW, 2019</i> (Acceptance rate: 31%) Honorable Mention for Best Paper[4] Sam Havron, Diana Freed, <u>Rahul Chatterjee</u>, Damon McCoy, Nicola Dell, Thomas Ristenpart, “Clinical Computer Security for Victims of Intimate Partner Violence.” <i>28th USENIX Security Symposium, 2019</i> (Acceptance rate: 16%)[5] Bijeeta Pal, Tal Daniel, <u>Rahul Chatterjee</u>, Thomas Ristenpart, “Beyond Credential Stuffing: Password Similarity Models using Neural Networks.” <i>40th IEEE Symposium on Security and Privacy, 2019</i> (Acceptance rate: 12%)[6] <u>Rahul Chatterjee</u>, Periwinkle Doerfler, Hadas Orgad, Sam Havron, Jackeline Palmer, Diana Freed, Karen Levy, Nicola Dell, Damon McCoy, Thomas Ristenpart, “The Spyware Used in Intimate Partner Violence.” <i>39th IEEE Symposium on Security and Privacy 2018</i> (Acceptance rate: 11%)[7] <u>Rahul Chatterjee</u>, Joanne Woodage, Yual Pnueli, Anusha Chowdhury, Thomas Ristenpart, “The TypTop System: Personalized Typo-Tolerant Password Checking.” <i>ACM CCS, 2017</i> (Acceptance rate: 18%)[8] Joanne Woodage, <u>Rahul Chatterjee</u>, Yevgeniy Dodis, Ari Juels, and Thomas Ristenpart, “A New Distribution-Sensitive Secure Sketch and Popularity-Proportional Hashing.” <i>Crypto 2017</i> (Acceptance rate: 23%)[9] <u>Rahul Chatterjee</u>, Anish Athalye, Devdatta Akhawe, Ari Juels, Thomas Ristenpart, “pASSWORD tYPOS and How to Correct Them Securely.” <i>37th IEEE Symposium on Security and Privacy 2016</i>. (Acceptance rate: 13%) Distinguished Student Paper[10] Adam Everspaugh, <u>Rahul Chatterjee</u>, Samuel Scott, Ari Juels, Thomas Ristenpart, “The Pythia PRF Service.” <i>USENIX Security 2015</i> (Acceptance rate: 16%) |

- [11] Rahul Chatterjee, Joseph Bonneau, Ari Juels, Thomas Ristenpart, “Cracking-Resistant Password Vaults using Natural Language Encoders.” *36th IEEE Symposium on Security and Privacy 2015* (Acceptance rate: 13%)

EMPLOYMENT

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| University of Wisconsin–Madison | Madison, WI |
| Assistant Professor | Aug 2019 - present |
| Cornell University | New York, USA |
| Graduate research assistant | Aug 2015 - Aug 2019 |
| Dropbox | San Francisco, USA |
| Research Intern. | Summer 2016 |
| Microsoft Research Technologies | Redmond, USA |
| Research Intern | Summer 2015 |
| University of Wisconsin-Madison | Madison, USA |
| Graduate research assistant | Aug 2013 - May 2015 |
| Two Roads Technological Solutions Pvt. Ltd. | Bangalore, India |
| Software developer and quantitative analyst | June 2012 - June 2013 |
| Indian Institute of Technology, Kharagpur | Kharagpur, India |
| Undergraduate research assistant | Sept 2010 - Mar 2012 |
| Adobe Systems India | Noida, India |
| Intern | Summer 2011 |

TEACHING

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| Instructor | |
| • Introduction to Information Security | Fall, 2019 |
| Teaching assistant | |
| • Building Startup Systems (by Adam Fleming) | Fall, 2017 |
| • Applied Cryptography (by Prof. Thomas Ristenpart) | Spring, 2016 |
| • Introduction to AI (by Prof. Bart Selman) | Fall, 2015 |
| • Introduction to Cryptography (by Prof. Somesh Jha) | Fall, 2014 |
| • C++ for Java Programmers (by Jim Skrentny) | Fall, 2013 |

INVITED TALKS

- *SILO, UW–Madison*, “The Perils of Leaked Passwords and How to Protect from Those”, Feb 2020
- *IIT Kharagpur*, “The Spyware Used in Intimate Partner Violence and How to Stop Them”, Jan 2020
- *University of Waterloo*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Apr 2019
- *UW–Madison*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *IMDEA Software Institute*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *ETH*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *Georgetown University*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *Penn State University*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *USC*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Mar 2019
- *Oregon State University*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Feb 2019
- *UCLA*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Feb 2019

- *CISPA Hlmholtz Center*, “Empiricism-Informed Secure System Design: From Improving Passwords to Helping Domestic Violence Victims.”, Feb 2018
- *Cyber Sexual Abuse Task Force*, “The Spyware Used in Intimate Partner Violence”, June 2018
- *IIT Kharagpur*, “Next-Gen Passwords”, January 2018
- *NSF Cybersecurity TTP Workshop*, “Improving Security by Tolerating Password Typos”, April 2017
- *Dropbox*, “pASSWORD tYPOS and How to Correct Them Securely”, July 2016

IMPACT

- Improved security of vulnerable Cornell accounts identified in [5].
- Build tools and worked as tech consultant to help survivors of intimate partner violence in New York City [4] .
- Based on our study [6], Google stopped serving advertisements on search terms relating to intimate partner violence and increased enforcement of Play Store policies.
- Pythia [10] is being used in industry for hardening passwords.

SELECTED MEDIA COVERAGE

Full list is available at: <https://pages.cs.wisc.edu/~chatterjee>.

- “NYC has hired hackers to hit back at stalkerware,” *MIT Technology Review* (August 14, 2019)
- “New tools help detect digital domestic abuse,” *Cornell Chronicle* (August 13, 2019)
- “How ‘stalkerware’ apps are letting abusive partners spy on their victims,” *MIT Technology Review* (July 10, 2019)
- “The simple way Apple and Google let domestic abusers stalk victims,” *WIRED* (July 2, 2019)
- “Study finds hundreds of stalker apps, few ways of finding them on your phone”, *Global News* (June 13, 2019)
- “Hundreds of apps can empower stalkers to track their victims,” *The New York Times* (May 19, 2018)
- “Why autocorrect for passwords is a great idea,” *MIT Tech Review* (June 1, 2016)
- “NoCrack: Protect passwords with fake ones?”, *SSL.com* (June 3, 2015)

ACADEMIC ACHIEVEMENTS, AWARDS AND SCHOLARSHIPS

- Distinguished student paper award for [9] at IEEE S&P. May, 2016
- Received *special CS fellowship* from UW–Madison. August, 2013
- Secured 4th rank ACM-ICPC regional contest North Central region. Nov, 2013
- Received IMPRS-CS fellowship for MS at MPI-Informatics, Saarbrücken. Aug 2012
- Jagadish Bose National Science Talent Search(JBNSTS) scholarship. 2008-2012.
- Selected for Indian National Mathematics Olympiad (INMO) in 2007.

EXTRA CURRICULAR ACTIVITIES

- Board member of PhD student association at Cornell Tech (PACT).
- Member of executive committee of Bengali Association of Madison (BAM), WI in 2014-15. BAM organizes lots of Indian cultural events in Madison, WI.
- Captain of mathematics Olympiad team of my residence hall and won silver and gold in Inter Hall Mathematics Olympiad in 2011 and 2012, respectively.