






Aritra Dhar

✉ aritra.dhar@inf.ethz.ch
☎ +41779448684
🌐 syssec.ethz.ch/people/dhar.html
🌐 www.linkedin.com/in/aritradhar
🎓 scholar.google.com/citations?hl=en&user=Icgn4goAAAAJ
📍 Zurich, Switzerland

Employment History

- Dec 2014 – Apr 2016  **Research Engineer.** Xerox Research Center India, Bangalore, India.
• Privacy preserving targeted advertisement and recommendation systems
• Using smartphone and smartwatches to assist and navigate the visually impaired
- Jan 2013 – July 2013  **Research Intern.** Accenture Technology Labs, Bangalore, India.
• Taint analysis on Java program to detect vulnerabilities like SQL injection, XSS
• Increasing anonymity in bitcoin transaction using aggregate signature scheme

Education

- 2016 – ..  **Ph.D., Computer Science, ETH Zurich, Switzerland**
Advisor: Dr. Srdjan Čapkun, System Security Group
Thesis title: *Building Trust in Modern Computing Platforms*
- 2012 – 2014  **M.Tech. Computer Science (Information Security), IIIT Delhi, India**
Thesis title: *Clotho : Saving Programs from Malformed Strings and Incorrect String-handling*
- 2008 – 2012  **B.Tech. Computer Science, WBUT, India**
Thesis title: *Security of Key Pre-distribution Schemes in Wireless Sensor Networks*

Research Publications and Patents

Conference Proceedings

- 1 **Dhar, A.**, Puddu, I., Kostiaainen, K., & Capkun, S. (2020). Proximatee: Hardened SGX attestation by proximity verification. In *ACM CODASPY 2020*.
- 2 **Dhar, A.**, Ulqinaku, E., Kostiaainen, K., & Capkun, S. (2020). Protection: Root-of-trust for IO in compromised platforms. In *NDSS 2020*.
- 3 Mavroudis, V., Wüst, K., **Dhar, A.**, Kostiaainen, K., & Capkun, S. (2020). Snappy: Fast on-chain payments with practical collaterals. In *NDSS 2020*.
- 4 Sommer, D. M., **Dhar, A.**, Malisa, L., Mohammadi, E., Ronzani, D., & Capkun, S. (2019). Deniable upload and download via passive participation. In *NSDI 2019*.
- 5 Allabadi, G., **Dhar, A.**, Bashir, A., & Purandare, R. (2018). METIS: resource and context-aware monitoring of finite state properties. In *Runtime verification RV 2018*.
- 6 Matetic, S., Ahmed, M., Kostiaainen, K., **Dhar, A.**, Sommer, D. M., Gervais, A., ... Capkun, S. (2017). ROTE: rollback protection for trusted execution. In *USENIX security 2017*.
- 7 **Dhar, A.**, Nittala, A., & Yadav, K. (2016). Tactback: Vibrotactile braille output using smartphone and smartwatch for visually impaired. In *ACM web for all conference, W4A '16*.
- 8 **Dhar, A.**, Purandare, R., Dhawan, M., & Rangaswamy, S. (2015). CLOTHO: saving programs from malformed strings and incorrect string-handling. In *ESEC/FSE 2015*.

- 9 Saxena, A., Misra, J., & **Dhar, A.** (2014). Increasing anonymity in bitcoin. In *Financial cryptography and data security - FC 2014*.
- 10 Sarkar, P., Rai, B. K., & **Dhar, A.** (2013). Connecting, scaling and securing RS code and TD based kpbs in wsns: Deterministic merging. In *ACM mobihoc '13*.

Journal Articles

- 1 Kostiaainen, K., **Dhar, A.**, & Capkun, S. (2020). Dedicated security chips in the age of secure enclaves. *IEEE Security Privacy*, 18(5), 38–46.
- 2 Tulabandhula, T., Vaya, S., & **Dhar, A.** (2020). Privacy preserving targeted advertising and recommendations. *Journal of Business Analytics*.

Preprints

- 1 Schneider*, M., **Dhar***, A., Puddu, I., Kostiaainen, K., & Capkun, S. (2020). PIE: A platform-wide TEE. Retrieved from <https://arxiv.org/abs/2010.10416>
- 2 Sluganovic, I., Ulqinaku, E., **Dhar, A.**, Lain, D., Capkun, S., & Martinovic, I. (2020). Integriscreen: Visually supervising remote user interactions on compromised clients. Retrieved from <https://arxiv.org/abs/2011.13979>
- 3 **Dhar, A.**, Yu, D.-Y., Kostiaainen, K., & Capkun, S. (2017). Integrikey: End-to-end integrity protection of user input. Retrieved from <https://eprint.iacr.org/2017/1245>

Patents

- 1 **Dhar, A.**, Vaya, S., Singh, A., Solanki, B. S., & Sharma, S. (2020). *Method and system for displaying targeted content on a digital signage board*. US Patent 10,825,057.
- 2 **Dhar, A.**, & Vaya, S. (2019). *Methods and systems for broadcasting targeted advertisements to mobile device*. US Patent 10,333,909.
- 3 Singh, A., Manjunath, G., Vaya, S., Solanki, B. S., Sharma, S., & **Dhar, A.** (2019). *Method and system for receiving targeted content*. US Patent 10,311,480.
- 4 Vaya, S., **Dhar, A.**, Solanki, B. S., Singh, A., Sharma, S., Pande, N., & Manjunath, G. (2019). *Methods and systems for interaction with digital signage board*. US Patent 10,489,824.
- 5 **Dhar, A.**, & Yadav, K. (2018). *Methods and systems for providing non-auditory feedback to users*. US Patent App. 15/607,804.
- 6 Vaya, S., **Dhar, A.**, & Tulabandhula, T. (2018). *Systems and methods for privacy preserving recommendation of items*. US Patent App. 15/417,274.

Talks

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| 2014 | ■ Accenture technology Labs, India , How to patch bugs in Large Software |
| 2015 | ■ FSE 2025, Bergamo, Italy , Clotho: Saving Programs from Malformed Strings and Incorrect String-Handling |
| | ■ [PhD talk] MPI-SWS, Saarbrücken, Germany , Clotho: Saving Programs from Malformed Strings and Incorrect String-Handling |
| | ■ [PhD talk] ETH Zurich, Switzerland , Clotho: Saving Programs from Malformed Strings and Incorrect String-Handling |
| 2018 | ■ RV 2018, Limassol, Cyprus , METIS: Resource and Context-Aware Monitoring of Finite State Properties |
| 2019 | ■ NSDI 2019, Boston, USA , Deniable Upload and Download via Passive Participation |

Talks (continued)

- 2020
 - **Winter Outing, ETH Zurich**, How (not) to Build Trusted Path
 - **NDSS 2020, San Diego, USA**, ProtectIO: Root-of-Trust for IO in Compromised Platforms
 - **CODASY 2020, Online**, ProximiTEE: Hardened SGX attestation by proximity verification
- 2021
 - **[Job Talk, Online] Microsoft Research, Seattle, USA**, Building Trust in Modern Computing Platforms
 - **[Job Talk, Online] Dfinity Foundation, Zurich, Switzerland**, Building Trust in Modern Computing Platforms
 - **[Job Talk, Online] HP Labs, Bristol, UK**, How (not) to Build Trusted Path
 - **[Job Talk, Online] VMWare Research, Palo Alto, USA**, Building Trust in Modern Computing Platforms

Awards and Achievements

- 2020
 - **ETH Spark award 2020**, top 5
 - **Best paper award**, CODASPY 2020
- 2018
 - **Best paper award**, RV 2018
- 2017
 - **ETH Spark award 2017**, top 5
- 2014
 - **Best M.Tech thesis award**, IIIT Delhi
- 2013
 - **Awarded Young Achiever**, Accenture Research Labs.

Skills

- Coding
 - Java, C/C++/Embedded C, Python, Scala, Datalog/Prolog, R, \LaTeX
- Web Dev
 - HTML, CSS, JavaScript, Tomcat Web Server.