

Student number _____

Name, first name _____

Department _____

Doctoral degree _____

1st Step: Confirmation of Acquired Credits for Doctoral Studies

The department herewith confirms that a minimum of 12 credits has been acquired.

11.05.2021

Date



Signature and Stamp of the Department

Without the department's confirmation it is not possible to register for your doctoral examination!
Please have that at the earliest possible stage.

2nd Step: Details on the Dissertation and Statement of Originality

The registration for the doctoral examination is only possible with the agreement of your examiner and after consulting with your co-examiners and the departmental study administration office. One bound copy of your thesis has to be submitted to the Doctoral Administration **at least 12 working days before the examination**. The examiner and co-examiners must also receive a copy. Make sure that they get it soon enough to have sufficient time to write their reports. Those have to be handed in with the departmental study administration. Please check the respective deadline with them.

Title of doctoral thesis

Cumulative dissertation: Yes No

Concerning the present thesis with my signature I confirm:

- that I am its sole author and I have compiled it in my own words,
- that I have not submitted it to any other university
- that I have not committed any of the forms of plagiarism described in the „[Citation etiquette](#)“,
- that I have documented all methods, data and processes truthfully,
- that I have not manipulated any data, and
- that I have mentioned all persons who were significant facilitators of the work.



Date

Signature of doctoral student

Please note: The Doctoral Administration accepts this form with original signatures only!

ETH Zurich. Doctoral Administration, Rämistrasse 101, HG FO 23.4, 8092 Zürich / doctorate@ethz.ch

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

- | | |
|------|--|
| 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.