Doreen Riepel

Curriculum Vitae

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Summary

My research focuses on the theoretical foundations of applied cryptography and in particular on provable security. With my work, I aim to contribute to improving the theoretical guarantees for cryptography used in practice as well as designing new cryptographic schemes that are theoretically sound and practical. To this end, I develop and use well-considered security definitions that formally capture security properties and adversarial behavior. I then build protocols and prove their security relying on the security of other cryptographic primitives or hardness assumptions.

Experience

UC San Diego — *La Jolla, CA, USA*
- Postdoctoral Researcher at the Faculty for Computer Science and Engineering — *04/2023 - present*
- Host: Mihir Bellare

UC Berkeley — *Berkeley, CA, USA*
- Research Visitor at the Faculty of Electrical Engineering and Computer Science — *03/2022 - 04/2022*
- Host: Sanjam Garg

NTT Research — *Virtual*
- Research Intern at the Cryptography & Information Security Laboratories — *06/2021 - 07/2021*
- Host: Hoeteck Wee

Ruhr University Bochum — *Bochum, Germany*
- Crossdisciplinary Research Project at the Chair for Systems Security — *10/2020 - 12/2020*
- Host: Thorsten Holz

NTNU Gjøvik — *Gjøvik, Norway*
- Erasmus Student at the Faculty of Information Technology and Electrical Engineering — *01/2018 - 06/2018*
- Area of Study: Information Security

Hewlett Packard Enterprise — *Bad Homburg, Germany*
- Student within the "DualStudy" Program — *10/2013 - 09/2016*
- Internships in six different departments at four different locations

Education

Dr. rer. nat. in Computer Science — *Bochum, Germany*
Ruhr University Bochum — *02/2019 - 03/2023*
- Advisor: Prof. Dr. Eike Kiltz
- Thesis title: "Tightly-Secure Authenticated Key Exchange"
- Thesis reviewers: Prof. Dr. Eike Kiltz, Prof. Dr. Tibor Jager, Prof. Dr. Shengli Liu
- Honor: Summa cum Laude

M. Sc. in IT Security — *Bochum, Germany*
Ruhr University Bochum — *10/2016 - 01/2019*
- Thesis title: "Tight Encryption in a Multi-User Setting"
- Thesis reviewers: Prof. Dr. Eike Kiltz, Dr. Sven Schäge

B. Sc. in Business Information Systems — *Mannheim, Germany*
DHBW Mannheim — *10/2013 - 09/2019*
- Main area of study: Software Engineering

Publications

Conference Publications

[KPRR23]	Eike Kiltz, Jiaxin Pan, Doreen Riepel, Magnus Ringerud. Multi-User CDH Problems and the Concrete Security of NAXOS and HMQV	CT-RSA
[DHK+23]	Julien Duman, Dominik Hartmann, Eike Kiltz, Sabrina Kunzweiler, Jonas Lehmann, Doreen Riepel. Generic Models for Group Actions	PKC
[EQR+23]	Thorsten Eisenhofer, Erwin Quiring, Doreen Riepel, Jonas Möller, Konrad Rieck, Thorsten Holz. No more Reviewer #2: Subverting Automatic Paper-Reviewer Assignment using Adversarial Learning	Usenix Security
[AEK+22]	Michel Abdalla, Thorsten Eisenhofer, Eike Kiltz, Sabrina Kunzweiler, Doreen Riepel. Password-Authenticated Key Exchange from Group Actions	Crypto
[DHK+22]	Julien Duman, Dominik Hartmann, Eike Kiltz, Sabrina Kunzweiler, Jonas Lehmann, Doreen Riepel. Group Action Key Encapsulation and Non-Interactive Key Exchange in the QROM	Asiacrypt
[DHRR22]	Benjamin Dowling, Eduard Hauck, Doreen Riepel, Paul Rösler. Strongly Anonymous Ratcheted Key Exchange	Asiacrypt
[RW22]	Doreen Riepel, Hoeteck Wee. FABEO: Fast Attribute-Based Encryption with Optimal Security	CCS
[HJK+21]	Shuai Han, Tibor Jager, Eike Kiltz, Shengli Liu, Jiaxin Pan, Doreen Riepel, Sven Schäge. Authenticated Key Exchange and Signatures with Tight Security in the Standard Model	Crypto
[ABH+21]	Joël Alwen, Bruno Blanchet, Eduard Hauck, Eike Kiltz, Benjamin Lipp, Doreen Riepel. Analysing the HPKE Standard	Eurocrypt
[JKRS21]	Tibor Jager, Eike Kiltz, Doreen Riepel, Sven Schäge. Tightly-Secure Authenticated Key Exchange, Revisited	Eurocrypt

Preprints

[ERC+23]	Thorsten Eisenhofer, Doreen Riepel, Varun Chandrasekaran, Esha Ghosh, Olga Ohrimenko, Nicolas Papernot. Verifiable and Provably Secure Machine Unlearning	

Talks

Conference Talks

Multi-User CDH Problems and the Concrete Security of NAXOS and HMQV
04/23 RSA Conference 2023 *San Francisco, CA, USA*

FABEO: Fast Attribute-Based Encryption with Optimal Security
11/22 ACM CCS 2022 *Los Angeles, CA, USA*

Password-Authenticated Key Exchange from Group Actions
08/22 Crypto 2022 *Santa Barbara, CA, USA*

Tightly-Secure Authenticated Key Exchange, Revisited
10/21 Eurocrypt 2021 *Zagreb, Crotia*

Authenticated Key Exchange and Signatures with Tight Security in the Standard Model
08/21 Crypto 2021 *Virtual*

Seminar and Workshop Talks

Advanced Key Exchange Protocols from CSIDH
- 07/23 Microsoft Research and University of Washington — *Redmond, WA, USA*

Analysis of Key Exchange Protocols based on Group Actions
- 03/23 NTNU Trondheim — *Trondheim, Norway*

Generic Models for Group Actions
- 03/23 Young Researcher Crypto Seminar (YRCS) — *Regensburg, Germany*

Password-Authenticated Key Exchange from Group Actions
- 11/22 UC San Diego — *La Jolla, CA, USA*

FABEO: Fast Attribute-Based Encryption with Optimal Security
- 08/22 NTT Research CIS Update 2022 — *Santa Barbara, CA, USA*

On Key Exchange from Group Actions
- 07/22 Secure Key Exchange and Channel Protocols (SKECH) — *Bertinoro, Italy*

Password-Authenticated Key Exchange from Group Actions
- 03/22 UC Berkeley — *Berkeley, CA, USA*
- 01/22 Max-Planck Institute for Security and Privacy — *Bochum, Germany*
- 01/22 New York University — *Virtual*

Teaching and Mentoring

Theses Supervision

Updatable Public Key Encryption — *Bochum, Germany*, *08/2022 - 01/2023*
- Master Thesis by Christian Baumhör at Ruhr University Bochum
- Supervised together with Eike Kiltz

Teaching Assistant

Post-Quantum Cryptography — *Bochum, Germany*, *10/2019 - 03/2020*
- Topics: Quantum algorithms and lattice-based cryptography
- Lectured by Eike Kiltz at Ruhr-University Bochum

Academic Service

Program Committees

- 2023 TCC
- 2024 Eurocrypt

External Reviewing

- 2020 Crypto
- 2021 Eurocrypt
- 2022 Crypto, ACM TOPS
- 2023 Eurocrypt, PKC

Extracurricular Activity

Study Advisory Board — *Bochum, Germany*, *04/2022 - 03/2023*
- Faculty for Computer Science at Ruhr University Bochum
- Representative of Research Assistants

Equal Opportunities and Diversity Board — *Bochum, Germany*, *09/2019 - 09/2021*
- Cluster of Excellence CASA at Ruhr University Bochum
- Representative of PhD students and co-speaker in the CASA Management Board