Sebastian Berndt

Research Areas: steganography, cryptography, approximation algorithms, FPT algorithms
Publications: AAAI, APPROX, CCS, IH&MMSEC, ISAAC, LATA, SEA (Link)
Teaching: Algorithm Design, IT-Security, Coding Theory (Link)
Education: BSc, MSc, Ph. D. Student (Link)

Education

2010 BSc in Computer Science, University of Kiel
2012 MSc in Computer Science, University of Kiel
2012– Research Associate, Ph. D. Student, University of Lübeck

Publications

Rankings are from the 2017 edition of the Computing Research and Education Association of Australasia Conference Ratings Exercise (CORE 2017), ranging from A* (exceptional) to C (sound and satisfactory).

2015 Berndt, Sebastian and Jansen, Klaus and Klein, Kim-Manuel (2015),
"Fully Dynamic Bin Packing Revisited", *APPROX/RANDOM 2015*, Rating: A

2016a Berndt, Sebastian and Reischuk, Rüdiger (2016),
"Steganography Based on Pattern Languages", *LATA 2016*, Rating: C

2016b Berndt, Sebastian and Liśkiewicz, Maciej (2016),
"Provable Secure Universal Steganography of Optimal Rate", *ACM IH&MMSEC 2016*, Rating: C
Awarded Best Student Paper

2016c Berndt, Sebastian and Liśkiewicz, Maciej (2016),
"Hard Communication Channels for Steganography", *ISAAC 2016*, Rating: A

2017a Berndt, Sebastian and Liśkiewicz, Maciej and Lutter, Matthias and Reischuk, Rüdiger (2017),
"Learning Residual Alternating Automata", *AAAI 2017*, Rating: A*

2017b Bannach, Max and Berndt, Sebastian and Ehlers, Thorsten (2017),
"Jdrasil: A Modular Library for Computing Tree Decompositions", *SEA 2017*, Rating: B

2017c Berndt, Sebastian and Liśkiewicz, Maciej (2017),
"Algorithm Substitution Attacks from a Steganographic Perspective", *CCS 2017*, Rating: A*

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Talks

2015a ”Learnability does not imply Secure Steganography”,
Nordic Complexity Workshop
2015b ”Fully Dynamic Bin Packing Revisited”,
Approximation Algorithms and Parameterized Complexity
2016a ”Berechnung von Baumzerlegungen mit SAT-Solvern”,
University of Kiel
2016b ”On the Relation between Steganography and Cryptography”,
Information Security Seminar, Queensland University of Technology
2017 ”The PACE challenge: practical algorithms for tree width”,
Universidad de Chile

Teaching

2012a Exercises on ”Algorithm Design”
2012b Exercises on ”Introduction to IT Security and Reliability”
2013a Exercises on ”Coding and Security”
2013b Exercises on ”Algorithm Design”
2013c Exercises on ”Introduction to IT Security and Reliability”
2014a Exercises on ”Coding and Security”
2014b Exercises on ”Algorithm Design”
2014c Exercises on ”Introduction to IT Security and Reliability”
2015a Exercises on ”Coding and Security”
2015b Exercises on ”Algorithm Design”
2015c Lectures and Exercises on ”Introduction to IT Security and Reliability”
2015d Lectures on ”Presentation and Documentation”
2016a Exercises on ”Coding and Security”
2016b Exercises on ”Algorithm Design”
2016c Lectures and Exercises on ”Introduction to IT Security and Reliability”

Theses

I was involved in the following theses, but was not formally one of the supervisors.

2015a Bachelor Thesis on ”Lower Bounds in Online Bin Packing Models”
2015b Bachelor Thesis on ”Secure Multiparty Computations in Bitcoin”
2015c Bachelor Thesis on ”Development and Examination of a Huffman-coding based Stegosystem”

Extracurricular Activities

2012–2015 Received the “*Teaching Certificate II*” by taking more than 10 courses in e.g. team leading, presentation techniques and others (Link)
2016 Organizing Commitee of *Creative Mathematical Sciences Communication* (Link)
2016 Taught a week-long summer course on algorithms to a group of pupils from age 14 to 17 based on *Computer Science Unplugged* (Link)
2016 Developed the tool *Jdrasil* to compute tree decompositions which got the third place in the tracks »sequential exact solver« and »parallel heuristic solver« in the first *PACE* challenge on parameterized algorithms (Software,Challenge)

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Awards

2016 Best Student Paper Award for ”Provable Secure Universal Steganography of Optimal Rate”
2016 Third place in the tracks »sequential exact solver« and »parallel heuristic solver« in the first *PACE* challenge on parameterized algorithms
2017 Third place in »Track A: Treewidth« in the second *PACE* challenge on parameterized algorithms

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