# Sebastian Berndt

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

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## Education

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| 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 2014 edition of the Computing Research and Education Association of Australasia Conference Ratings Exercise (CORE 2014), ranging from A* (exceptional) to C (sound and satisfactory).

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| 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*, Acceptance Rate: 34% (21/61) **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 |

## Talks

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| 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 |

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## Teaching

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| 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.

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| 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

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| 2012–2015 | Received the "*Teaching Certificate I*" 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 decompisitions 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) |

## Awards

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| 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 |

## Interests

Kayaking, Improvisational Theatre, Hiking

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http://seberndt.github.io/files/cv.pdf

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