

## Susanna F. de Rezende

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- CONTACT            Email: rezende@math.cas.cz
- INFORMATION      Homepage: <http://www.people.kth.se/~sfdr/>  
Address: Pětřdomí 4  
                         160 00 Prague 6, Czech Republic
- CURRENT  
POSITION            Postdoc at the Institute of Mathematics of the Czech Academy of Sciences in Prague, Czech Republic hosted by Professor Pavel Pudlák with a grant from the Knuth and Alice Wallenberg Foundation
- RESEARCH  
INTERESTS           Computational complexity, proof and circuit complexity, communication complexity, graph theory
- EMPLOYMENT  
AND EDUCATION    **School of Electrical Engineering and Computer Science, KTH Royal Institute of Technology, Stockholm, Sweden**
- Ph.D. in Theoretical Computer Science, August 2014 – August 2019
- PhD Thesis: Lower Bounds and Trade-offs in Proof Complexity
  - Advisor: Prof. Jakob Nordström
- Simons Institute for the Theory of Computing, Berkeley CA, USA**
- Research Fellow, August – December 2018
- Program: Lower Bounds in Computational Complexity
- Institute of Mathematics and Statistics, University of São Paulo, Brazil**
- M.Sc. in Computer Science, March 2012 – May 2014
- Master’s Dissertation: Longest Paths in Graphs
  - Advisor: Prof. Yoshiko Wakabayashi
  - Funding: Grant from Fapesp 11/16348-0
- B.Sc. in Computer Science, February 2008 – December 2011
- GPA 8.8 (out of 10)
  - Scientific Initiation Scholarship, August 2009 – February 2012
    - Title: *Topics in Combinatorics and Graph Theory*
    - Advisor: Prof. Yoshiko Wakabayashi
    - Funding: Grant from CNPq 116402/2009-1, 123740/2010-0, 800430/2011-5
- AWARDS            ○ Prize for Excellent Doctoral Dissertation 2018/2019 awarded by SMC (Stockholm Mathematics Centre).
- M.Sc. thesis selected by CSBC (Congress of the Brazilian Society of Computer Science) among the top 10 in Brazil in the area of Computer Science in 2014
  - B.Sc. degree awarded with Honorable Mention for Outstanding Achievement, April 2012
  - Gold Medal in the V National Symposium of Scientific Initiation held at the Institute of Pure and Applied Mathematics (IMPA), Rio de Janeiro, November 2010

PARTICIPATION  
IN EVENTS

Conferences

- CCC 2019 – New Brunswick, NJ, USA, July 18 - 20, 2019
  - Oral Presentation: Nullstellensatz Size-Degree Trade-offs from Reversible Pebbling
- STOC 2018 – Los Angeles, CA, USA, June 25 - 29, 2018
  - Oral Presentation: Clique is Hard on Average for Regular Resolution
- ITCS 2017 – Berkeley, CA, USA, January 8 - 11, 2017
  - Accepted paper: Cumulative Space in Black-White Pebbling and Resolution
- FOCS 2016 – New Brunswick, NJ, USA, October 9 - 11, 2016
  - Oral Presentation: How Limited Interaction Hinders Real Communication (and What It Means for Proof and Circuit Complexity)
- ICGT 2014 – Grenoble, France, June 30 - July 4, 2014
  - Accepted extended abstract: On the Proper Orientation Number of Bipartite Graphs
- EuroComb 2011 – Budapest, Hungary, August 29 - September 2, 2011
  - Oral Presentation: Intersection of Longest Paths in a Graph

Workshops

- Algebraic Techniques in Computational Complexity – held at Banff International Research Station (BIRS), Canada, July 7 - 12, 2019
  - Oral Presentation: Lifting with Simple Gadgets and Applications to Circuit and Proof Complexity
- Theory and Practice of Satisfiability Solving – held at Casa Matemática Oaxaca (CMO), Mexico, August 26 - 31, 2018
  - Oral Presentation: Clique is Hard for State-of-the-Art Algorithms
- Proof Complexity and Beyond – held at Mathematisches Forschungsinstitut Oberwolfach, Germany, August 13 - 19, 2017
  - Oral Presentation: Clique is Hard on Average for Regular Resolution
- Low-Depth Complexity Workshop – held at Chebyshev Laboratory, St. Petersburg, Russia, May 21 - 25, 2016
- Proof Complexity Workshop – held at Chebyshev Laboratory, St. Petersburg, Russia, May 15 - 20, 2016
- Dagstuhl Seminar 14421 - Optimal algorithms and proofs – held at Dagstuhl, Germany, October 12 - 17, 2014

PUBLICATIONS

1. **Susanna F. de Rezende**, Jakob Nordström, Dmitry Sokolov, and Kilian Risse, “Exponential Lower Bounds for Weak Pigeonhole Principle and Perfect Matching Formulas over Sparse Graphs”, Technical Report TR19-174 *Electronic Colloquium on Computational Complexity (ECCC)*, 2019.
2. **Susanna F. de Rezende**, Or Meir, Jakob Nordström, Toniann Pitassi, Robert Robere, Marc Vinyals, “Lifting with Simple Gadgets and Applications for Cutting Planes”, *Submitted manuscript*, 2019.
3. **Susanna F. de Rezende**, Or Meir, Jakob Nordström, Robert Robere, “Nullstellensatz Size-Degree Trade-offs from Reversible Pebbling”, *In Proceedings of the 34th Computational Complexity Conference (CCC 2019)*, 2019.
4. Albert Atserias, Ilario Bonacina, **Susanna F. de Rezende**, Massimo Lauria, Jakob Nordström, Alexander Razborov, “Clique is Hard on Average for Regular Resolution”, *In Proceedings of the 50th Annual ACM Symposium on Theory of Computing (STOC 2018)*, 2018.

5. Joël Alwen, **Susanna F. de Rezende**, Jakob Nordström, Marc Vinyals, “Cumulative Space in Black-White Pebbling and Resolution”, in *Proceedings of the 8th Innovations in Theoretical Computer Science Conference (ITCS 2017)*, 67:38:1–38:21, 2017.
6. **Susanna F. de Rezende**, Jakob Nordström, Marc Vinyals, “How Limited Interaction Hinders Real Communication (and What It Means for Proof and Circuit Complexity)”, In *Proceedings of the 57th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2016)*, 295–304, 2016.
7. Julio Araujo, Nathann Cohen, **Susanna F. de Rezende**, Frédéric Havet, Phablo F.S. Moura, “On the proper orientation number of bipartite graphs”, *Theoretical Computer Science*, 566:59–75, 2015.
8. **Susanna F. de Rezende**, Cristina G. Fernandes, Daniel M. Martin, Yoshiko Wakabayashi, “Intersecting Longest Paths”, *Discrete Mathematics*, 313(12):1401–1408, 2013.
9. **Susanna F. de Rezende**, Cristina G. Fernandes, Daniel M. Martin, Yoshiko Wakabayashi, “Intersection of Longest Paths in a Graph”, *Electronic Notes in Discrete Mathematics*, 38:743–748, 2011.

LANGUAGE	<b>Portuguese, English and Spanish</b>	Fluent
PROFICIENCY	<b>Swedish and French</b>	Intermediate
	<b>German</b>	Basic