

# Fábio Happ Botler

Ph.D in Computer Science

Graph Theory · Combinatorics · Algorithms

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## Education

- Mar 2011 – Feb 2016 Ph.D in Computer Science (under the supervision of Yoshiko Wakabayashi).  
Thesis: Decomposition of Graphs into Paths.  
Instituto de Matemática e Estatística, Universidade de São Paulo (USP), Brazil
- Apr 2014 – Mar 2015 Research Internship (under the supervision of Cun-Quan Zhang).  
Research area: Graph Decompositions.  
Department of Mathematics, West Virginia University (WVU), EUA
- Mar 2009 – Feb 2011 MSc in Pure Mathematics (under the supervision of Sóstenes Lins).  
Dissertation: A reduction of the Integer Factorization Problem  
to the 0-1 Programming Problem.  
Centro de Ciências Exatas e da Natureza, Univ. Federal de Pernambuco (UFPE), Brazil
- Mar 2005 – Dec 2008 BSc in Pure Mathematics  
Centro de Ciências Exatas e da Natureza, Univ. Federal de Pernambuco (UFPE), Brazil

## Research Experience

- 2017 Research visit – 2 weeks (host: Carsten Thomassen).  
Danish Technical University (DTU), Dinamarca
- 2017–2018 Post-doctorate (under the supervision of Andrea Jiménez).  
Centro de Investigación y Modelamiento de Fenómenos Aleatorios,  
Universidad de Valparaíso (CIMFAV), Chile
- 2016 – 2017 Post-doctorate (under the supervision of Andrea Jiménez).  
Departamento de Ingeniería Industrial, Facultad de Ciencias Físicas y Matemáticas,  
Universidad de Chile (UCHile), Chile
- 2016 Post-doctorate – 3 months (Under the supervision of Orlando Lee).  
Instituto de Computação, Universidade Estadual de Campinas (Unicamp), Brazil
- 2014 Research visit – 2 weeks (host: Andrea Jiménez).  
School of Mathematics, Georgia Institute of Technology (GT), EUA
- 2007 – 2008 Undergraduate scientific research – Oil Reservoir Simulation.  
Centro de Tecnologia e Geociências, Universidade Federal de Pernambuco (UFPE), Brazil
- 2006 – 2008 Undergraduate scientific research – Development of Algorithms for the representation  
of Conic Curves.  
Centro de Ciências Exatas e da Natureza, Univ. Federal de Pernambuco (UFPE), Brazil

## Teaching Experience

- Aug 2018 – Present Assistant professor.  
Programa de Engenharia de Sistemas e Computação  
Universidade Federal do Rio de Janeiro (UFRJ), Brazil
- Aug 2012 – Dec 2012 Teaching assistant – Approximation Algorithms.  
Instituto de Matemática e Estatística, Universidade de São Paulo (USP), Brazil
- Aug 2010 – Feb 2011 Temporary professor (40h/week).  
Universidade Federal Rural de Pernambuco (UFRPE), Brazil
- 2007 Volunteer math tutor in a high school with primarily low-income students. (06h/month).  
Projeto Interação, Centro de Artes, Universidade Federal de Pernambuco (UFPE), Brazil

## Awards and Indications

- 2017 Honorable mention at the 2017 CAPES Thesis Award.  
Honorable mention at the 2017 Carlos Teobaldo Gutierrez Vidalon Award.  
Finalist at the 30<sup>th</sup> Brazilian Computing Society Thesis Contest.  
Selected to represent the Institute of Mathematics and Statistics at the 6<sup>th</sup> edition of the USP Thesis Award.

## Publications in Journals and Submitted Papers

- 2019 F. Botler, M. Sambinelli, A Jiménez,  
*Gallai's path decomposition conjecture for triangle-free planar graphs.*  
Discrete Mathematics, Volume 342, Issue 5, 1403-1414, 2019.
- F. Botler, M. Sambinelli, R. S. Coelho, O. Lee,  
*On Gallai's Conjecture for graphs with treewidth at most 3.*  
Accepted for publication at the Journal of Graph Theory.
- 2018 F. Botler, A. Cristi, R. Hoeksma, K. Schewior, A. A Tönnis,  
*Superset: a (super)natural variant of the card game set.*  
Leibniz International Proceedings in Informatics (LIPIcs), Vol. 100, p. 12:1-12:17, 2018.
- 2017 F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Decomposing highly edge-connected graphs into paths of any given length.*  
Journal of Combinatorial Theory, Series B, Vol. 122, p. 508 – 542, 2017.
- F. Botler, A. Jiménez,  
*On path decompositions of  $2k$ -regular graphs.*  
Discrete Mathematics, Vol. 340, Issue 6, p. 1405 – 1411.
- F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Decomposing Regular Graphs with Prescribed Girth into Paths of Given Length.*  
European Journal of Combinatorics, Vol. 66, p. 28 – 36, 2017 (volume dedicado ao Eurocomb'15).
- F. Botler, A. Talon,  
*Decomposing 8-regular graphs into paths of length 4.*  
Discrete Mathematics, Vol. 340, Issue 9, p. 2275 – 2285.
- 2016 F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Decomposing highly connected graphs into paths of length five.*  
Discrete Applied Mathematics, Vol. 245, p. 128-138, 2018.
- 2015 F. Botler, G. O. Mota, Y. Wakabayashi,  
*Decompositions of triangle-free 5-regular graphs into paths of length five.*  
Discrete Mathematics, v. 338, p. 1845 – 1855, 2015.

## Publications in Conference Proceedings

- 2017 F. Botler and M. Sambinelli,  
*Gallai's conjecture for graphs with treewidth 3*,  
Electronic Notes in Discrete Mathematics 62 (2017), 147 – 152,  
IX Latin and American Algorithms, Graphs and Optimization Symposium, LAGOS 2017.
- F. Botler and A. Talon,  
*Decomposing 8-regular graphs into paths of length 4*,  
Electronic Notes in Discrete Mathematics 61 (2017), 147 – 153,  
The Ninth European Conference on Combinatorics, Graph Theory and Applications, EuroComb 2017.
- 2015 F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Decompositions of highly connected graphs into paths of any given length*,  
Electronic Notes in Discrete Mathematics 49 (2015), 795 – 802,  
The Eight European Conference on Combinatorics, Graph Theory and Applications, EuroComb 2015.
- F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Path decompositions of regular graphs with prescribed girth*,  
Electronic Notes in Discrete Mathematics 49 (2015), 629 – 636,  
The Eight European Conference on Combinatorics, Graph Theory and Applications, EuroComb 2015.
- F. Botler, A. Jiménez,  
*On path decompositions of  $2k$ -regular graphs*,  
Electronic Notes in Discrete Mathematics 50 (2015), 163 – 168,  
VIII Latin-American Algorithms, Graphs and Optimization Symposium, LAGOS 2015.
- F. Botler, G. O. Mota, M. T. I. Oshiro, and Y. Wakabayashi,  
*Decompositions of highly connected graphs into paths of length five*,  
Electronic Notes in Discrete Mathematics 50 (2015), 211 – 216,  
VIII Latin-American Algorithms, Graphs and Optimization Symposium, LAGOS 2015.

## Fellowships and Grants

- Jan 2019 – Dec 2021 Projeto Universal  
Conselho do Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
- Mar 2017 – Aug 2018 Post-doctorate  
Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT), Chile
- Aug 2016 – Mar 2017 Post-doctorate  
Núcleo Milenio Información y Coordinación en Redes, Chile
- May 2016 – Aug 2016 Post-doctorate  
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)
- Aug 2011 – Feb 2016 Ph.D  
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)
- Apr 2014 – Mar 2015 Research Internship  
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)
- Mar 2011 – Jul 2011 Ph.D  
Conselho do Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
- Mar 2008 – Feb 2011 MSc  
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)
- Aug 2008 – Dec 2008 Undergraduate scientific research  
Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (ANP)
- Mar 2006 – Feb 2007 Undergraduate scientific research  
Programa Institucional de Bolsas de Iniciação Científica  
do Conselho do Conselho Nacional de Desenvolvimento Científico e Tecnológico (PIBIC/CNPq)

## Participation in Events

- 2019 Canadian Discrete and Algorithmic Mathematics Conference - CanaDAM 2019  
Presentation: *Gallai's Conjecture for Triangle-Free Planar Graphs*.  
Vancouver, BC, Canada
- X Latin and American Algorithms, Graphs and Optimization Symposium - LAGO 2019  
Presentation: *Tuza's conjecture for triangulations and graphs with small treewidth*.  
Belo Horizonte, Brazil
- 32<sup>o</sup> Colóquio Brasileiro de Matemática - CBM 2019  
Rio de Janeiro, Brazil
- 2018 International Congress of Mathematicians - ICM 2018  
Rio de Janeiro, Brazil
- VIII Latin American Workshop on Cliques in Graphs - LAWCG 2018  
Rio de Janeiro, Brazil
- 2017 IX Latin and American Algorithms, Graphs and Optimization Symp. - LAGOS 2017.  
Presentation: *Gallai's conjecture for graphs with treewidth 3*.  
Marseille, France
- European Conference on Combinatorics, Graph Theory and Applications - Eurocomb.  
Vienna, Austria
- 2016 Primer encuentro conjunto de la Sociedad de Matemática de Chile y  
la Unión Matemática Argentina - SUMA.  
Valparaíso, Chile
- São Paulo School of Advanced Science on Algorithms, Combinatorics and Optimization.  
São Paulo, Brazil
- XI Escuela de Verano en Matemáticas Discretas.  
Valparaíso, Chile
- 2015 European Conference on Combinatorics, Graph Theory and Applications - Eurocomb.  
Presentation: *Decompositions of highly connected graphs into paths of any given length*.  
Bergen, Norway
- VIII Latin-American Algorithms, Graphs and Optimization Symposium - LAGOS.  
Apresentações: *Decompositions of highly connected graphs into paths of length five;*  
*On path decompositions of  $2k$ -regular graphs*.  
Beberibe, Brazil
- 2014 9th International colloquium on graph theory and combinatorics - ICGT.  
Presentation: *Path decompositions of triangle-free 5-regular graphs*.  
Grenoble, France
- 27th Cumberland Conference on Combinatorics, Graph Theory & Computing.  
Morgantown, United States of America
- 2013 European Conference on Combinatorics, Graph Theory and Applications - Eurocomb.  
Poster: *A constrained path decomposition of cubic graphs and the path number of cacti*.  
Pisa, Italy
- Workshop em Estruturas Combinatórias, Otimização e Algoritmos.  
Campos do Jordão, Brazil
- 2011 Workshop on Theory and Algorithms on Discrete Structures.  
Campinas, Brazil
- 2007 & 2008 Undergraduate Scientific Research Congress.  
Presentation: *Desenvolvimento de Algoritmos para a Representação de Curvas Cônicas*.  
Univ. Federal de Pernambuco (UFPE), Brazil