# Allan Sapucaia

Email: allansapucaia@gmail.com
Nationality: Brazillian

## Education

**PhD in Combinatorial Optimization - University of Campinas** August 2017 - August 2022 (Expected)
Thesis Title: Geometric Decomposition Problems
Advisors: Pedro J. de Rezende and Cid C. de Souza
GPA: 4.0/4.0
Scholarship: São Paulo Research Foundation (FAPESP)

**BSc in Computer Engineering - University of Campinas** March 2012 - July 2017
Emphasis in Algorithms
GPA: 0.92/1.0 (Graduated with the highest distinction)

## Research Interests

- Combinatorial Optimization
- Integer Linear Programming
- Decomposition Methods
- Operations Research
- Computational Geometry

## Awards

- **von Neumann Award**: Highest GPA among C.E graduates - Institute of Computing, UNICAMP 2017
- **Babbage Award**: Highest GPA among C.E students - Institute of Computing, UNICAMP 2015

## Experience

### Industry

- **Site Reliability Engineering Intern** - Google, Mountain View January 2017 - April 2017
- **Software Engineering Intern** - Google, Mountain View January 2016 - April 2016

### Research

- **Undergraduate Research** (UNICAMP)
  Advisors: Cid C. de Souza and Pedro J. Rezende June 2015 - November 2015
  Scholarship: São Paulo Research Foundation (FAPESP)

- **Facebook Open Academy - Automatic Matrix Differentiation** (Facebook/UNICAMP)
  Supervisor: Luiz F. Bittecourt September 2014 - December 2014

- **Research Assistant** (University of Waterloo)
  Supervisor: Ricardo Fukasawa May 2014 - August 2014
  Scholarship: São Paulo Research Foundation (FAPESP)

- **Undergraduate Research** (UNICAMP)
  Advisor: Orlando Lee September 2013 - December 2014
  Scholarship: São Paulo Research Foundation (FAPESP)

# Publications

## Refereed articles in journals

- Allan Sapucaia-Barboza, Pedro J. de Rezende and Cid C. de Souza. Solving the Minimum Convex Partition of Point Sets with Integer Programming. *Computational Geometry* Vol. 99(3), 2021 (Preprint)

## Submitted

- Ricardo Fukasawa, Allan Sapucaia-Barboza and Alejandro Toriello. A Comparison of Bounds for the Traveling Salesman Problem. *Submitted.* (Preprint)

## In preparation

- Allan Sapucaia, Andre A. Cire, Pedro J. de Rezende and Cid C. de Souza. Solving Large 3-Colorable Unit Disk Cover Instances Exactly. *Work in Progress*, 2022

## Refereed conference proceedings (presenter in **bold**)

- Travis Gagie, Mozhgan Saeidi and **Allan Sapucaia**. Ruler Wrapping. Procedings of the *38th European Workshop on Computational Geometry* (EuroCG), 2022 (Preprint)
- **Allan Sapucaia**, Pedro J. de Rezende and Cid C. de Souza. Solving the Coarseness Problem by ILP Using Column Generation. Proceedings of the *21st International Conference on Computational Science and its Applications* (ICCSA), 2021
- **Allan Sapucaia**, Andre A. Cire, Pedro J. de Rezende and Cid C. de Souza. Convex Bichromatic Quadrangulation of Point Sets. Proceedings of the *33rd Canadian Conference on Computational Geometry* (CCCG), 2021
- **Allan Sapucaia-Barboza**, Pedro J. de Rezende and Cid C. de Souza. Minimum Convex Partition of Point Sets. Proceedings of the *11th International Conference on Algorithms and Complexity* (CIAC), 2019

# Presentations

- Solving Large Scale Instances of a Geometric Set Cover Problem with Coloring Conflicts - MIAO Seminar - University of Copenhagen - 2022
- Implementing Branch-Cut-and-Price using SCIP (Workshop) - Institute of Computing, UNICAMP - 2019
- Implementing Benders Decomposition using CPLEX (Workshop) - 2nd OALOCo - UNICAMP - 2019

# Service

## Adhoc Referee

- IEEE Sensors Journal
- International Symposium on Computational Geometry (SoCG)

# Teaching Experience

- Teaching Assistant - Institute of Computing, UNICAMP
  - Mathematical Foundations of Computer Science - 2s2018, 2s2019
  - Design and Analysis of Algorithms II - 1s2019
  - Design and Analysis of Algorithms I - 1s2018