

This work describes algorithms in graphs. That is, it formulates and explains methods and processes to solve various problems and issues of interest involving graphs, through a computer. Many of these graph problems are of great practical importance, as they serve as models for solving various problems in which we are forced to use the computer. A constant concern in the exposure of the algorithms is computational efficiency, to guarantee the direct use of the methods.

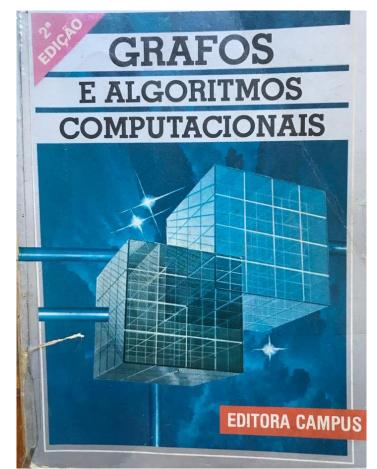
The objective of this work is to honour Professor Jayme Luiz Szwarcfiter who reached the mark of 42 oriented doctoral theses.



Figure 1: Jayme's recent books "Data Structure and its Algorithms", 2017 and "Computational Graph Theory: Algorithms", 2018.

Basic Techniques

In general, an algorithm to solve a certain problem in a graph assumes that it is represented in an appropriate form. On the other hand, it would also be that the graph was supplied to the algorithm in a simple way to be specified. It is reasonable, for example, that this specification matches your sets of vertices and edges, respectively.



and its Algorithms", 1994.

Computational Graph Theory: Algorithms

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Introduction

Objective

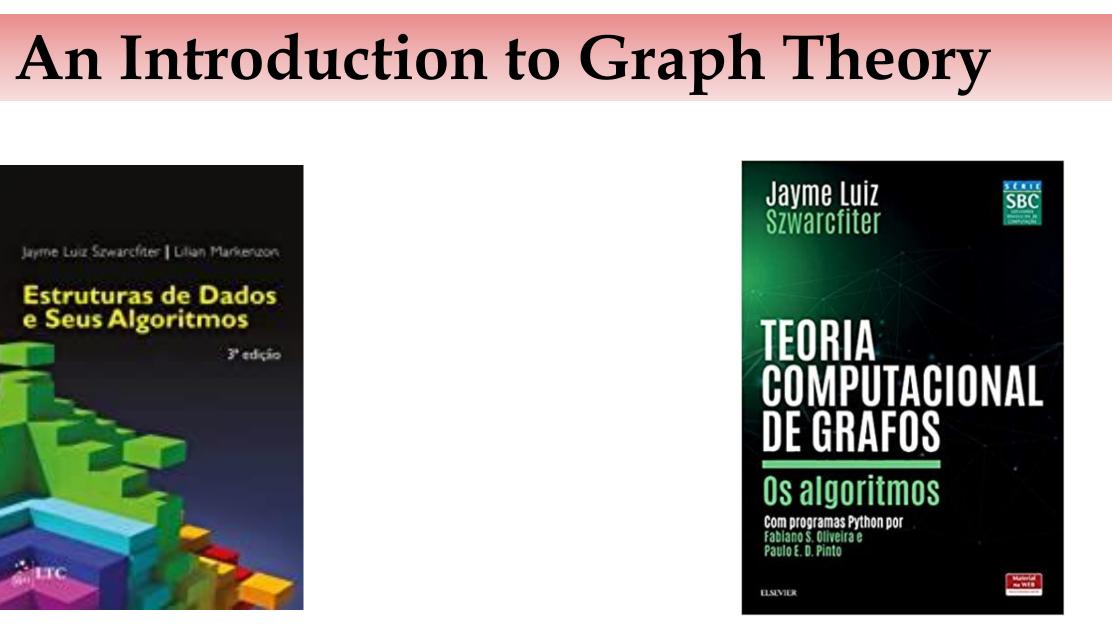




Figure 2: Jayme's first two books "Graphs and Computational Algorithms", 1984 and "Data Structure"



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^[1] BONDY, Adrian ; DURAN, Guillermo ; LIN, Min Chi ; SZWARCFITER, J. L. Self-Clique Graphs and Permutation Matrices. J. G. T., v. 44, p. 178-192, 2003. ^[2] ITAI, A.; PAPADIMITRIOU, C. H.; SZWARCFITER, J. L. Hamilton Paths in Grid Graphs. SIAM J. on Comp., v. 11, p. 676-686, 1982. ^[3] KNUTH, D. E.; SZWARCFITER, J. L. A Structured Program to Generate All Topological Sorting Arrangements. Inform. Process. Lett., v. 6, p. 153-157, 1974. ^[4]LUCCHESI, C. L.; MELLO, C. P.; SZWARCFITER, J. L. On Clique Complete Graphs. Discrete Math., v. 183, p. 247-254, 1998.

Short Biography

In 1967, he graduated in electronic engineering from UFRJ. He completed his master's degree in 1971 at COPPE. In 1975 he obtained a Ph.D. in Computer Science from the University of Newcastle Upon Tyne, England.

Table 1: Academic life

Degrees	Year
Electronic Engineering	1967
Master	1971
Ph. D.	1975

Recent Awards Elon Lages Lima 2019 Award, Brazi Mathematics and Brazilian Society Computational Mathematics. Louis Leloir Award 2014, Ministry of Technology and Product Innovation Grand Cross of the National Order 2010, Ministry of Science and Techn

He is currently Full Professor and Emeritus at UFRJ. In 2001, the Journal of the Brazilian Computer Society dedicated a special edition to prof. Jayme contemplating is main publications. Among others, Jayme wrote articles in conjunction with Adrian Bondy [1], Donald E. Knuth [3], and Christos H. Papadimitriou [2]. He eceived several awards and distinctions, including the Álvaro Alberto do Ciência e ecnologia Award, MCTI-CNPq; the Giulio Massarani Award for Academic Merit om COPPE; the Scientific Merit Award from the Brazilian Computer Society; the ouis Leloir Award from the Ministry of Science, Technology and Productive novation in Argentina; the degrees of Commander and Grand Cross of the National Order of Scientific Merit, MCTI; among others.

Conclusions

Professor Jayme has an important contribution to the formation of human resources as he advised dozens of masters and doctors who are currently teaching at various universities in the country and abroad. He has reached the mark of 42 oriented doctoral theses, and most of his 161 journal papers are fruit of his work as supervisor and of his network of collaborators [4].

References

Acknowledgment









Table 2: Recent Awards

	Year
zilian Society of of Applied and	2019
of Science, a, Argentina.	2014
of Scientific Merit nology.	2013



