Curriculum Vitae

Personal information

Name	**Filipe Daniel Alves Brandão**
Homepage	http://www.fdabrandao.pt/
E-mail	fdabrandao@gmail.com
Nationality	Portuguese
Date of birth	April 28, 1989
Gender	Male

Open Source Projects

Project name	VPSolver: Vector Packing Solver based on an Arc-flow Formulation with Graph Compression
Project URL	http://vpsolver.fdabrandao.pt/
GitHub	https://github.com/fdabrandao/vpsolver
Notes	– This project won the Orbel Wolsey Award 2016.
	– The underlying model and algorithms are currently being used by a large multinational company in the labeling & packaging industry.

Project name	PyMPL: Mathematical Programming Toolbox for AMPL/GMPL
GitHub	https://github.com/fdabrandao/pympl
Notes	– This software includes a complete implementation of the library of reformulations for lot-sizing problems LS-LIB (proposed in the book "Production Planning by Mixed Integer Programming") made in collaboration with Laurence Wolsey.

Research Projects

Dates	2008 – 2012
Occupation or position held	Researcher / Programmer
Project name	"CIVITAS-ELAN: Mobilising citizens for vital cities" European Project for traffic rationalisation in Ljubljana, Gent, Zagreb, Brno and Porto. European Commission, "Framework Programme 7", four year project starting in September 2008.
Main activities and responsibilities	Study and development of exact and approximate methods for solving several NP-hard problems with applications in transportation.
Name and address of employer	Faculdade de Ciências, Universidade do Porto, Rua do Campo Alegre, 4169-007 Porto, Portugal
Type of business or sector	Operations Research / Combinatorial Optimization

Education and Training

Dates	2012 – 2017
Title of qualification awarded	PhD, Computer Science
Principal subjects covered	Operations Research; Integer Programming; Combinatorial Optimization
PdD thesis	Brandão, F. (2017). Cutting & Packing Problems: General Arc-flow Formulation with Graph Compression. PhD thesis, Faculdade de Ciências da Universidade do Porto, Portugal.
Institution	Faculdade de Ciências, Universidade do Porto

Dates	2010 – 2012
Title of qualification awarded	Master's degree, Computer Science
Principal subjects covered	Data Mining; Machine Learning; Combinatorial Optimization; Parallel and Distributed Computing
Master's thesis	Brandão, F. (2012). Bin Packing and Related Problems: Pattern-Based Approaches.
	Master's thesis, Faculdade de Ciências da Universidade do Porto, Portugal.
Institution	Faculdade de Ciências, Universidade do Porto
Classification	20 (out of 20)

Dates	2007 – 2010
Title of qualification awarded	Bachelor's degree, Computer Science
Principal subjects covered	Algorithms and Data Structures; General and Applied Mathematics; Network and Systems Architecture; Graph Theory; Operations Research
Institution	Faculdade de Ciências, Universidade do Porto
Classification	18 (out of 20)

Prizes and Awards

– Orbel Wolsey Award 2016 for the best OR related open-source implementation due to the open-source project "VPSolver: Vector Packing Solver based on an Arc-flow Formulation with Graph Compression"
– Prof. Doutor Jayme Rios de Sousa Award, granted by the Department of Mathematics of the Faculty of Science of the University of Porto, due to academic achievements (the highest score in the class of Infinitesimal Analysis in the year of 2009/2010)
– Prize awarded Scholarship of Merit from University of Porto referring to the year of 2009/2010
– Prize awarded Scholarship of Merit from University of Porto referring to the year of 2008/2009

Personal Skills

Mother tongue(s)
Self-assessment
European level[(*)]

Portuguese

Understanding				Speaking			Writing	
Listening		Reading		Spoken interaction	Spoken production		Writing	

English

C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user

[(*)]*Common European Framework of Reference (CEF) level*

Computer Skills

Programming languages	Python, C/C++ (STL)
Also familiar with	R, Octave, Java, Haskell, PHP, HTML, Javascript, CSS, SQL
Programming Contests	Represented Portugal in the International Olympiads in Informatics 2007, Croatia (IOI'2007)
Operating systems	Linux (Ubuntu, Debian, and CentOS)

Research

Journal papers

– Brandão, F. and Pedroso, J. P. (2016). Bin packing and related problems: General arc-flow formulation with graph compression. Computers & Operations Research, 69:56 – 67.
– Brandão, F. and Pedroso, J. P. (2014). Fast pattern-based algorithms for cutting stock. Computers & Operations Research, 48(0):69–80.
– Brandão, F. and Pedroso, J. P. (2014). A complete search method for the relaxed traveling tournament problem. EURO Journal on Computational Optimization, 2(1-2):77–86.

Talks

– "Bin Packing and Related Problems: General Arc-flow Formulation with Graph Compression" at the 30th annual conference of the Belgian Operational Research Society, UCL-CORE, January 28-29, 2016
– "Bin Packing and Related Problems: General Arc-flow Formulation with Graph Compression" at the 20th Combinatorial Optimization Workshop, Aussois, France, January 4-8, 2016
– "Bin Packing and Related Problems: General Arc-flow Formulation with Graph Compression" at the 5th Porto Meeting on Mathematics for Industry, April 10 - 11, 2014
– "Bin Packing and Related Problems: Pattern-Based Approaches" at the ESI-CP, EURO Summer Institute on Cutting and Packing, Porto, Portugal, July 16 - 27, 2012