

Application for the Position of
Postdoctoral Researcher
within the COCA-Project



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Fanny Pascual
Laboratoire d'Informatique de Paris 6
Paris, France

DATE
May 28, 2010

**Application for the Position of
Postdoctoral Researcher within the Research Project COCA**

Dear Mrs. Pascual,

My strong interest in the position of postdoctoral researcher within the project Combinatorial Optimization with competing agents (COCA) is based on the fact, that in my scientific career, my central research area has been the interface between Combinatorial Optimization and Social Choice Theory.

During my studies of Technical Mathematics at the Graz University of Technology (with specialization in Operations Research), I developed a particular interest in Discrete Optimization, especially in Combinatorial Optimization. This interest finds expression in my thesis "Second shortest path problems", where variations of the shortest path problem are considered. Since October 2007, I have worked as a research assistant at the University of Graz. As first publications indicate, my research interests cover variations of classical optimization problems such as the shortest path problem, matching problems, and the resource allocation problem. My doctoral thesis, however, reflects that the main focus of my research has lain on problems in connection with spanning trees of an undirected graph. Starting with individuals' opinions on the edge-set of an undirected graph $G = (V, E)$, the goal was to select a "fair" spanning tree of G . In this respect, I have chosen an interdisciplinary approach combining concepts from Social Choice Theory with tools from Combinatorial Optimization.

The COCA-project would offer me a great opportunity to continue my interdisciplinary research activities. To me, this challenging interface between Combinatorial Optimization and Game Theory is also of high attractiveness because of its high importance and numerous practical applications in economics.

I am looking forward to an answer from you. Should you have any questions, please do not hesitate to contact/phone me, or contact one of the supervisors of my doctoral thesis (see contact details at the end of this application). Thank you for considering me for this position.

Sincerely,

Andreas Darmann

Objective

Dipl.-Ing. Mag. **DARMANN ANDREAS**
Institute of Public Economics
University of Graz
Universitaetsstr. 15
A-8010 Graz
email: andreas.darmann@uni-graz.at
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Personal Data

Date of birth: 08.06.1980
Place of birth: Wolfsberg, Austria
Citizenship: Austria
Military service completed
Private address: Plueddemanngasse 35-14, A-8010 Graz, Austria
Language skills: German (native language), English (fluent), Italian (basic knowledge), Swedish (basic knowledge)

Scientific CV

since Oct. 2007 Research assistant at the Institute of Public Economics,
University of Graz, Austria

Oct. 2007 - June 2010 University Studies at the University of Graz

Doctoral programme in Social and Economic Sciences, with specialization
in Economics

Doctoral thesis: "Finding Fair Spanning Trees: Preferences, Constraints,
and Computational Complexity." (Thesis completed, defensio dissertationis
in June)

Oct. 2004 - July 2007 University studies at the University of Graz

Study of Mathematics and Geography (Secondary School Teacher
Accreditation)

Degree with honours in July 2007

Oct. 1999 - Mar. 2006 University Studies at the Graz University of Technology

Study of Technical Mathematics, with specialization in the branch "Opera-
tions Research, Statistics, Mathematics in Finance and Insurance"

Master thesis: "Second shortest path problems"

Degree with honours in March 2006

ac. year 2003/04	Excellence scholarship in academic year 2003/2004 at Graz University of Technology
Winter term 2003/04	Exchange semester at Oulu University of Technology, Finland
Mar. 2002 - Jan. 2007	Tutor at the Institute of Mathematics C (Mathematical Structure Theory), Graz University of Technology, during seven semesters between March 2002 and January 2007

Academic Activities

Oct. 2009	1st International Conference on Algorithmic Decision Theory (ADT 2009) in Venice, Italy. Poster: Minimum Spanning Trees with Disjunctive Constraints
May 2009	Participant at "Spring School on Fixed Parameter and Exact Algorithms" (AGAPE 2009) in Corsica, France
Sep. 2008	2nd International Conference on Computational Social Choice (COMSOC 2008) in Liverpool, UK Talk: Computing Spanning Trees in a Social Choice Context
Sep. 2008	Participant at Summerschool "Graph Theory, Algorithms and Applications" Centre Ettore Majorana for Scientific Culture, Erice, Italy

Teaching Experience

Mathematics and Statistics for Economics and Business students,
Production and Supply for Economics students

Publications of Andreas Darmann

1. A. Darmann, C. Klamler, and U. Pferschy. A note on maximizing the minimum voter satisfaction on spanning trees. *Mathematical Social Sciences* 60, p.82-85, 2010.
2. A. Darmann, C. Klamler, and U. Pferschy. Maximizing the minimum voter satisfaction on spanning trees. *Mathematical Social Sciences* 58, p.238-250, 2009.
3. A. Darmann, U. Pferschy, and J. Schauer. Resource allocation with time intervals. Available at *Optimization Online*: http://www.optimization-online.org/DB_HTML/2009/09/2403.html, 2009.
4. A. Darmann, U. Pferschy, J. Schauer, and G.J. Woeginger. Paths, trees and matchings under disjunctive constraints. Available at *Optimization Online*: http://www.optimization-online.org/DB_HTML/2009/10/2422.html, 2009.
5. A. Darmann, C. Klamler, and U. Pferschy. Finding socially best spanning trees. Available at *SSRN*: <http://ssrn.com/abstract=1328916>, 2008.
6. A. Darmann, U. Pferschy, and J. Schauer. Minimal spanning trees with conflict graphs. Available at *Optimization Online*: http://www.optimization-online.org/DB_HTML/2009/01/2188.html, 2008.
7. A. Darmann, U. Pferschy, and J. Schauer. Determining a minimum spanning tree with disjunctive constraints. In *Algorithmic Decision Theory: Proceedings of the first international conference, ADT 2009*, Editors: F. Rossi and A. Tsoukias. Lecture Notes in Computer Science 5783, p.414-423, 2009.
8. A. Darmann, C. Klamler, and U. Pferschy. Computing spanning trees in a social choice context. In *Proceedings of the 2nd International Workshop on Computational Social Choice 2008*, Editors: U. Endriss and P.W. Goldberg, p.193-204, University of Liverpool, 2008.

Contact details for references

For questions or references please contact the supervisors of my doctoral thesis:

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- *Prof. Dr. Ulrich Pferschy*
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