

Janina Brenner
Krefelder Str. 3
10555 Berlin
Germany
+49-30-36409041
brenner@math.tu-berlin.de

Laurent Gourvès
LAMSADE, Université Paris Dauphine
Place du Maréchal de Lattre de Tassigny
75775 Paris Cedex 16
France

May 31, 2010

Application for Postdoc Position in the COCA Project

Dear Prof. Gourvès,

when I read your announcement for a postdoc position in the COCA project, the project description immediately reminded me of my own academic profile. After having written my dissertation on mechanism design with a focus on cooperative cost sharing, I now plan to study other topics in combinatorial optimization with selfish agents.

I am currently working at Technical University Berlin in the “Combinatorial Optimization and Graph Algorithms” group lead by Rolf Möhring. The project “Mechanisms for Network Design Problems” on which I work forms part of the internationally renowned research center Matheon. I wrote my dissertation under the supervision of Guido Schäfer, who recently accepted a professor position in Amsterdam.

Originally coming from mathematics and in particular combinatorial optimization, the last years have intensified my interest in algorithmic game theory. The participation in various international conferences and doctoral schools in this field as well as my research visit at Tim Roughgarden's group in Stanford have allowed me to gain a good overview over the area. I am therefore eager to pursue new research topics in algorithmic game theory while continuing to employ my strong background in combinatorial ideas and techniques.

I recently started working on mechanism design *with externalities*, a very intriguing new direction with many open questions. I would like to continue my research in this very young and growing field. I am also interested in *optimal mechanism design*, to which I was introduced during my time in Stanford.

However, I am especially looking forward to the new opportunities for cooperating that are awaiting me as a postdoc in your group. I am therefore very open and curious to jointly work on my own and other topics in algorithmic game theory and combinatorial optimization, in particular on questions combining the two fields. The COCA project promises to be a great surrounding for me to do this.

Best regards,

Janina Brenner

Enclosed: Curriculum vitae, publication list, list of references, preliminary Ph.D. certificate.

Janina Brenner

born 25.02.1981 in Hamburg, Germany

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Research Interests

Algorithmic Game Theory (Mechanism Design, Cost Sharing, Auctions, Mechanism Design with Externalities), **Combinatorial Optimization** (Scheduling, Graph Theory, Network Design), Online and Approximation Algorithms, Computational Complexity.

Education

- **Ph.D.** (04/2006-06/2010) Technical University Berlin, Project “Mechanisms for Network Design Problems” in DFG Research Center MATHEON
Thesis: “Truthful Mechanism Design for Cooperative Cost Sharing and Congestion Games” graded magna cum laude, Advisor: **Guido Schäfer**
08-10/2008: Stanford University, Department of Computer Science, Working with **Tim Roughgarden**
- **Diplom** (10/2002-01/2006) in Mathematics (Minor: Computer Science), Technical University Braunschweig, Germany, **Grade 1.0** (best possible),
Thesis: “Simultaneous Scheduling, Binding and Routing for Processor-Like Reconfigurable Architectures” graded 1.0, Advisor: **Sándor Fekete**
Summer semester 2004: Université de Nice Sophia Antipolis, France
- **Vordiplom** (10/2000-09/2002) in Mathematics, Grade 1 (best possible), and in Financial and Economic Mathematics, Grade 1 (best possible), Technical University Braunschweig
- **Abitur** (06/2000) Wilhelm-Meyer-Gymnasium Braunschweig, Grade: 1.2
1997-1998: Northfield Mount Hermon School, Massachusetts, USA.

Scholarships and Prizes

- **German Academic Exchange Service** (Ph.D. Scholarship): 08-10/2008
- **German National Academic Foundation** (Full Graduate Scholarship): 09/2003-12/2005
- **Erasmus** (European Commission Exchange Program): Summer semester 2004
- **Wilhelm-Meyer-Gymnasium** (High School Program for Highly Gifted Students): 1996-2000
- **Northfield Mount Hermon School** (Math Prize for Calculus AB): school year 1997/1998
- **Mathematics Olympiade** (German National Round): 3rd prize in 1996, participation in 1997 and 2000

- **Center for Talented Youth** (Summer School on “Applications of Contemporary Mathematics, Los Angeles): 08/1994
- **William-Stern-Gesellschaft** (Mathematics Talent Search Competition): 3rd place and best girl, 1993

Practical Experience

- Student research assistant in the DFG Project “**SwarmNet**”, Institute for Mathematical Optimization, TU Braunschweig (Prof. Fekete): 09/2003-03/2004
- Internship at the **Institute for Applied Production Technology** (design and implementation of a dictionary database with GUI): 08/2001-09/2001
- Internship at the editorial office for mathematics school books at **Westermann publishing company**: 06/2000-07/2000

Teaching Assistantships

- **Introduction to Game Theory**: Winter semester 2006/07
- **Mathematics for Engineers**: Winter semester 2002/03
- **Linear Algebra II**: Summer semester 2002

Schools and Workshops

- **10th Max-Planck Advanced Course on the Foundations of Computer Science** (ADFOCS), September 2009, Saarbrücken, Germany
- **AEOLUS Spring School on Algorithmic Principles of Selfishness and Mechanism Design**, April 2008, Paderborn, Germany
- **DIMAP Workshop on Algorithmic Game Theory**, March 2007, Warwick, UK
- **7th Max-Planck Advanced Course on the Foundations of Computer Science** (ADFOCS), August 2006, Saarbrücken, Germany

Professional Activities

Reviewer for the conferences **WINE**, **CIAC**, **ISAAC**, **WAOA** and the journal **TOCS**.

Languages

- **German** (native language)
- **English** (fluent)
- **French** (advanced)
- **Spanish** (intermediate)
- **Japanese** (basics)

Personal interests

I continuously sing in ambinioned choirs and chamber choirs as a soprano. I enjoy playing the violin and piano and doing sports such as swimming, volleyball and ultimate frisbee.

Publications

(Janina Brenner)

Publications in Journals

- **Cooperative Cost Sharing via Generalized Incremental Mechanisms.** Janina Brenner and Guido Schäfer. Submitted to *Games and Economic Behavior*.
- **Group-Strategyproof Cost Sharing Mechanisms for Makespan and Other Scheduling Problems.** Janina Brenner and Guido Schäfer. In *Theoretical Computer Science, Volume 401, Issue 1–3*, pp. 96–106, 2008.
- **A Minimization Version of a Directed Subgraph Homeomorphism Problem.** Janina A. Brenner, Sándor P. Fekete and Jan C. van der Veen. In *Mathematical Methods of Operations Research, Volume 69, Issue 2*, pp. 281–296, 2009.

Publications at International Conferences

- **Online Cooperative Cost Sharing.** Janina Brenner and Guido Schäfer. *7th International Conference on Algorithms and Complexity (CIAC 2010)*, LNCS Volume 6078, pp. 252–263, 2010.
- **Singleton Acyclic Mechanisms and their Applications to Scheduling Problems.** Janina Brenner and Guido Schäfer. *1st International Symposium on Algorithmic Game Theory (SAGT 2008)*, LNCS Volume 4997, pp. 315–326, 2008.
- **Cost Sharing Methods for Makespan and Completion Time Scheduling.** Janina Brenner and Guido Schäfer. *24th International Symposium on Theoretical Aspects of Computer Science (STACS 2007)*, LNCS Volume 4393, pp. 670–681, 2007.
- **Optimal Simultaneous Scheduling, Binding and Routing for Processor-Like Reconfigurable Architectures.** Janina A. Brenner, Jan C. van der Veen, Sándor P. Fekete, Julio de Oliveira Filho and Wolfgang Rosenstiel. *16th International Conference on Field Programmable Logic and Applications (FPL 2006)*.

Online Publications

- **Simultaneous Scheduling, Binding and Routing for Coarse-Grain Reconfigurable Architectures.** Janina A. Brenner, Sándor P. Fekete and Jan C. van der Veen. In *Electronic Notes in Discrete Mathematics 25*, pp. 21–22, 2006.

References

(Janina Brenner)

- **Prof. Dr. Guido Schäfer**
Centrum Wiskunde & Informatica
Algorithms, Combinatorics and Optimization
Science Park 123
1098 XG Amsterdam
The Netherlands
+31 20-592-4165
g.schaefer@cw.nl
- **Prof. Dr. Rolf Möhring**
Technische Universität Berlin
Fakultät II - Mathematik und Naturwissenschaften
Institut für Mathematik
Straße des 17. Juni 136
10623 Berlin
Germany
+49 30-314-24594
rolf.moehring@tu-berlin.de
- **Prof. Dr. Tim Roughgarden**
Stanford University
Computer Science Department
353 Serra Mall
Stanford, CA 94305
United States of America
+1 650-725-4671
tim@cs.stanford.edu



☎ (+4930) 314 -79714 Fax: (+4930) 314 - 21754 email: Krajewski@math.tu-berlin.de

Preliminary Certificate

This is to certify that on May 17, 2010,

Ms. Janina Brenner, born February 6, 1989 in Hamburg,
successfully completed all requirements necessary in order to receive the academic title

Doktor der Naturwissenschaften (Dr. rer. nat.)

Final mark: "magna cum laude"

Thesis title:

"Truthful Mechanism Design for Cooperative Cost Sharing and Congestion Games"
"

Ms. Janina Brenner will be allowed to use the title "Doctor" upon receipt of official certificate.

A handwritten signature in black ink, appearing to read 'C. Thomsen', written over a white background.

Berlin, May 17, 2010

Professor Dr. C. Thomsen
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