INFORMS OPTIMIZATION SOCIETY Business Meeting - October 13, 2011

Minutes of 2011 Business Meeting

INFORMS OPTIMIZATION SOCIETY
Business Meeting - November 13, 2011

AGENDA
1) Chair's updates: OS website and newsletter (Jon Lee)
2) Treasurer's report (Marina Epelman)
3) Membership update (Jon Lee)
4) OS Prizes (Jon Lee)
5) Biannual OS Conference (Tallys Yunes)
6) Elections (Jon Lee)
7) Secretary/Treasurer position (Jon Lee)

Chair's updates

Website:
-- Society's website has been converted to the INFORMS template and updated.
-- The new url is http://www.informs.org/Community/Optimization-Society.
-- (Despite appearances, it is not necessary to log in to access any material on the site.)
-- New web editor: Pietro Belotti (pbelott@clemson.edu). Pietro worked on the new format and design and continues to maintain the site. Please contact him or Jon with suggestions for the website.
Newsletter:
-- Society's newsletter has been re-incarnated after a long absence.
-- First new issue came out in March 2011; will continue on an annual schedule.
-- Published electronically at http://www.informs.org/Community/Optimization-Society/Newsletter (as a pdf file).
-- Contents: Chair's column, Calls for nominations for OS Prizes and OS Officers, Conference Announcements, Featured articles from four 2010 OS prize winners, giving an overview of their award-winning work.
-- New editor: Shabbir Ahmed (sahmed@gatech.edu). Shabbir put together the inaugural issue and is continuing to serve as the editor. Please contact him of Jon with suggestions for the newsletter.
-- Jon is exploring the possibility of including unobtrusive ads in the newsletter in the future, to help maintain Society's financial health. Hopefully, ads can be informative for the readership of the newsletter as well.

Treasurer's report

-- 2008: Opening balance $29,516; Ending balance $34,156.
-- 2009: Opening balance $34,156; Ending balance $38,830.
-- 2010: Opening balance $38,830; Ending balance $50,165.
-- 2011: Opening balance $50,165; Dues revenue $8320.
-- We now award 4 annual prizes, so our expenses increased considerably.
-- We now get charged credit card fees on transactions, although the amount is not that significant.
-- In 2010, INFORMS finally processed the profits of about $9,000.00 from the 2010 OS conference, leading in net revenue of over $11,000.00 for the year.
-- Estimated end-year balance for 2011 ~$52,000.

Membership update

-- OS membership has been between 800 and 900, fluctuating slightly, for over 5 years.
-- Attendees were encouraged to renew/add Optimization Society membership; dues are used to pay for the prizes and hospitality at the business meetings.
-- INFORMS recognizes several special interest groups within the Society; members are encouraged to indicate their interest in one or more of these areas when registering for the Society membership. This information will be of use to the Vice-Chairs, as they organize sponsored tracks at the annual meetings.

OS Prizes

-- The Society awards four annual prizes.

-- Webpage http://www.informs.org/Community/Optimization-Society/Prizes contains information on winners and nomination deadlines for future prizes.
-- The prize winners presented their work and received the plaques and prizes at a special conference session sponsored by the OS earlier in the day.
-- Below is the information on each award --- congratulations again to all the winners, and a great deal of gratitude to prize committee members!

2011 Student Paper Prize

-- Committee: Matthias Koeppe (Chair), Jean-Philippe Richard, Katya Scheinberg.
-- Winner: Daniel Dadush (Georgia Institute of Technology), for his paper "On the Chvátal-Gomory Closure of a Compact Convex Set" co-authored with Santanu S. Dey and Juan Pablo Vielma.
-- Citation:
The paper shows that the Chvátal-Gomory closure of compact convex sets is a rational polytope. For the special case of rational polytopes, this is a well-known result. The new result includes the case of irrational polytopes and thus resolves a question that was posed by Schrijver (1980) and had remained open since. Solving this long-open question is already a wonderful contribution, finally completing the Chvátal-Gomory theory for polytopes. The paper goes beyond this and also provides a solution for arbitrary compact convex sets, completing the program started in a paper by Dey and Vielma (2010) for the case of ellipsoids and continued in an earlier paper by Dadush, Dey, and Vielma (2011) for the case of strictly convex bodies. The importance of this contribution lies in providing a foundation for a finite linear cutting plane theory for convex integer optimization.
The paper uses techniques from convex geometry and the geometry of numbers in an expertly way. In the proofs, the authors avoid explicit calculations in favor of soft analysis, including techniques from point-set topology, which makes the paper particularly elegant.

2011 Prize for Young Researchers

-- Committee: Dan Bienstock, Endre Boros, Tom McCormick, Jim Renegar (Chair)
-- Winner: Tobias Achterberg (IBM) for his paper "SCIP: solving constraint integer programs", Mathematical Programming Computation 1 (1):1-41, 2009. DOI: 10.1007/s12532-008-0001-1
-- Citation:
The Optimization Society of INFORMS awards the 2011 Optimization Prize for Young Researchers to Tobias Achterberg for his paper: "SCIP: solving constraint integer programs", Mathematical Programming Computation 1 (1):1-41, 2009. DOI: 10.1007/s12532-008-0001-1.
The vibrancy of optimization as a research discipline is due in part to a dichotomy between theory and practice, a healthy interplay that has long been embraced by the optimization community. Highly influential works by young researchers, however, almost always lean towards the theoretical (conceptual) side, bringing new vantage points rather than necessitating a deep command of a broad range of existing literature and techniques. With regards to computation in particular, it was virtually unthinkable to imagine a scenario where a young researcher introduces a general software framework that, when restricted to specialized problems, is nearly as efficient as top commercial codes designed specifically for those problems (codes that were under development for nearly the lifetime of young researchers).
Virtually unthinkable, but not impossible, as was shown by Tobias Achterberg in introducing SCIP (a software framework for "solving constraint integer programs"), and in originating -- and recognizing the utility of -- the notion of constraint integer programming, which integrates constraint programming, mixed integer programming, and satisfiability modeling and solving techniques.
Thus we are very pleased to announce that Tobias Achterberg receives the 2011 INFORMS Young Researcher Award for his paper, "SCIP: solving constraint integer programs" (Math. Prog. Comp. (2009) 1:1-41), which is exemplary among documents introducing new software in that it shows the forest as well as the trees, in that it clearly documents extensive testing against other software packages, and in that it contains an intriguing example of how the framework has been deployed in solving an especially difficult and highly important modeling problem in chip design verification.

The 2011 Farkas Prize for Mid-career Researchers

-- Committee: Gérard Cornuéjols (Chair), Alexander Shapiro, David Shmoys, Stephen Wright
-- Winner: Andrew Goldberg (Microsoft Research)
-- Citation:
Andrew Goldberg has made fundamental contributions to the design and analysis of algorithms for the most central problems in network optimization. His early work on the maximum-flow and minimum-cost flow problems, in which he devised the push-relabel approach for flow algorithms, changed the basic paradigms in efficient flow computation, and today is taught in undergraduate and graduate courses worldwide. A decade later, his work with Satish Rao broke the O(mn) running time "barrier" for maximum-flow algorithms, and introduced an elegant length-function technique to the analysis of blocking-flow algorithms. His work on shortest path algorithms highlights the interplay between ingenious data-structure design and algorithmic paradigms that are tailored to take full advantage of them.

Goldberg's contributions to the empirical analysis of algorithms has perhaps had an even broader impact than his theoretical work, due to the level of rigor and scale of his analyses, as well as from his publicly available optimization software library. Furthermore, his approach of using empirical work as the springboard for subsequent theoretical analyses, in addition to using theoretical research to motivate empirical analyses, has been a hallmark of his research career. Beyond network optimization, his research on algorithmic mechanisms for the pricing of digital goods was influential at the start of the age of electronic commerce. Most recently, Goldberg has returned to his investigation of shortest-path computations, motivated by the need for methods suitable at the scale required by GPS technology, devising new algorithms with strong theoretical guarantees and stunning practical performance on real-world networks.

In summary, Andrew Goldberg is eminently deserving of the 2011 Farkas Prize awarded by the Optimization Society within the Institute for Operations Research and Management Science.

The 2011 Khachiyan Prize for Life-time Accomplishments in Optimization

----

-- Committee: George Nemhauser (Chair), Yurii Nesterov, Lex Schrijver, Tamás Terlaky

-- Winners: Kees Roos (Emeritus Professor of Delft University of Technology) and Jean-Philippe Vial (Emeritus Professor of the University of Geneva)

-- Citation:

The 2011 recipients of the INFORMS Optimization Society Khachiyan Prize, for their remarkable life-time achievements in the area of optimization, are Kees Roos, Emeritus Professor of Delft University of Technology, The Netherlands, and Jean-Philippe Vial, Emeritus Professor of the University of Geneva, Switzerland.

During their remarkable careers, Kees Roos and Jean-Philippe Vial have grown to be among the world's foremost experts in the area of continuous optimization, with main interest in the fundamental problems of linear programming. Through their research, training and service contributions, they are among the most recognized members of the INFORMS community. Kees Roos and Jean-Philippe Vial played a key role in the development of Interior Point Methods (IPMs) worldwide, and in particular in Europe. Soon after Leonid Khachiyan proved the polynomial-time solvability of LP and Karmarkar introduced his projective method, Roos and Vial started their long term and high impact collaboration on IPMs. Their first joint publication, "A polynomial method of approximate centers for linear programming," published in Mathematical Programming, contains a very elegant and simple polynomial-time IPM, that still today yields the best complexity bound for solving linear optimization problems. This paper has inspired many (young) researchers. They continued to play a key role in the developments of IPMs and not only published numerous impactful papers on IPMs together, but were also able to set up strong and productive research groups on IPMs. Roos and Vial supervised many PhD students, postdocs and visitors on IPMs, who later become highly successful in the area of optimization, both in practice and academia. Their collaboration also resulted in a very influential book on IPMs: "Theory and Algorithms for Linear Optimization: An Interior Point Approach" (with co-author Tamás Terlaky) in 1997, with a new edition by Springer in 2006. This seminal book is introducing generations of researchers to IPMs.   Both Roos and Vial have carried out important applied optimization projects with high scientific and societal impact. Kees Roos recently carried out an important project for the Dutch government on "Optimizing dike heights in the Netherlands." Jean-Philippe Vial developed appropriate tools for several large companies for handling uncertainty in large economic, energy and climate models for the assessment of global environmental policies.

Kees Roos has published more than one hundred papers in international peer-reviewed journals. He has also co-authored another important book, in which a new paradigm of IPMs, called "self-regularity," is described. ("Self-Regularity. A New Paradigm for Primal-Dual Interior-Point Algorithms," Princeton University Press, 2002). He is a Fellow of EUROPT, the European Working Group on Continuous Optimization.

Jean-Philippe Vial has published over one hundred papers in premier international OR journals. He served as President of the Mathematical Programming Society in 1998-2001. He has also been an associate editor of Management Science, and edited several influential proceedings.

2012 OS conference

-- February 24-26, 2012; Coral Gables, Florida

-- Theme: "Optimization and Analytics: New Frontiers in Theory and Practice"

-- Website: http://bus.miami.edu/ios

-- Co-chairs: Anuj Mehrotra and Michael A. Trick

-- Organizing Committee: Edward Baker, Hari Natarajan, Tallys Yunes

-- Plenary Speakers: Jerald Ault (University of Miami), Dimitris Bertsimas (MIT), Manoj Saxena (IBM)

-- Important Dates:

--- Early registration: December 15, 2011

--- Abstract/poster deadline: January 6, 2012

--- Acceptance notification: January 13, 2012

Election results

-- Continuing officers:

--- Chair: Jon Lee (2010-2012, Most-recent past chair: 2012-2013)
--- Vice-chairs (2010-2012): Oleg Prokopyev (Global optimization), Frank E. Curtis (Nonlinear programming), Huseyin Topaloglu
--- Editors: Shabbir Ahmed (newsletter), Pietro Belotti (website)

-- Thanks to the officers finishing their terms:
--- Most-recent past Chair: Nick Sahinidis (Chair 2009-2011, Chair-elect, 2008-2009)
--- Secretary/Threasurer: Marina Epelman (2008-2011)
--- Vice-chairs (2009-2011): Steven Dirkse (Computational optimization/software), Oktay Gunluk (IP), Miguel Anjos (LP and Complementarity), Mauricio Resende (Networks)

--- Chair-elect: Sanjay Mehrotra (2011-2012; Chair 2012-2014; Most-recent past Chair 2014-2015)
--- Secretary/Treasurer: Jim Luedtke (2011-2013)
--- Vice chairs (2011-2013): Brian Borchers (Computational optimization/software), Santanu Dey (IP), Mohammad Oskoorouchi (LP and Complementarity), Baski Balasundaram (Networks)

Secretary/Treasurer position

-- A proposal to revise the bylaws to change the term of the Secretary/Treasurer to 2 years has been sent to the Society membership for review.
-- A two-year term for the Secretary/Treasurer, starting in the middle of a Chair's term and simultaneously with the term of a Chair-elect, will help continuity and ease of transition. (Current 3-year term requires a new Chair and a new Secretary/Treasurer to start their terms simultaneously in alternate election cycles.)
-- The proposal included allowing the Secretary/Treasurer to run for a second consecutive 2-year term.
-- If approved, transition will be easy, since Marina Epelman served an extra year, as no nominations were received when her original term ended in 2010. Jim Luedtke will serve out the remaining 2 years of the current three-year term.
-- The proposal received support from the floor; a formal vote will be held via surveymonkey in the near future.

Thanks

Thanks to all of you for supporting the INFORMS Optimization Society.
Society officers welcome any questions, suggestions and ideas related to the Optimization Society activities.
See you at the OS conference in Coral Gables, FL, in February 2012, and the INFORMS Annual Meeting in Phoenix, AZ, in October 2012!
Marina A. Epelman
Secretary/Treasurer
INFORMS Optimization Society
mepelman at umich.edu