

Menkes Hector Louis van den Briel

Leeds School of Business
University of Colorado
Boulder, CO 80309-0419
USA

Phone: 480.241.7397
Email: vandenbr@colorado.edu
Homepage: leeds-faculty.colorado.edu/vandenbr

EDUCATION

Doctor of Philosophy in Industrial Engineering, August 2008 (4.0/4.0 GPA).
Arizona State University, Tempe, AZ, USA.

Dissertation title: *Integer Programming Approaches for Automated Planning*.

Master of Science in Econometrics, May 2000.

Universiteit Maastricht, Maastricht, Netherlands.

Thesis title: *Algorithms for CDM on Slot Allocation: Slot Swapping and Slot Shifting*.

HONORS AND AWARDS

- [Honorable mention](#). ICAPS Best Dissertation Award 2009. *International Conference on Automated Planning and Scheduling*.
- Significant media coverage, including: [The Wall Street Journal](#), [The New York Times](#), [Popular Mechanics](#), and [NPR](#), 2003-2008.
- First prize. Operations Research in Practice Poster Session. *INFORMS Annual Meeting* 2003. Atlanta, Georgia, USA.
- Dean's list. Fall 2001, Spring 2002. Ira A. Fulton School of Engineering, Arizona State University.

EXPERIENCE

Leeds School of Business Boulder, CO, USA
University of Colorado

Research Associate and Lecturer 2008–Present

- Improving tractability of open pit mine production scheduling problems (ongoing research with Thomas Vossen, Alexandra Newman, and Kevin Wood).
- Applying operations research techniques to address issues in optimal artificial intelligence planning (ongoing research with Thomas Vossen).
- Consulting for Natural Habitat Adventures, a travel company that offers an expanded range of wildlife-viewing tours (with Thomas Vossen).
- Saved Natural Habitat Adventures over \$100,000 by scheduling trips for the 2009 season.
- Instructor for an upper level undergraduate course in supply chain management.

Department of Computer Science Tempe, AZ, USA
Arizona State University

Research Associate 2003–2008

- Developed an integer programming based artificial intelligence planning system (with AAAI fellow Subbarao Kambhampati).

- Results revived the use of integer programming approaches in artificial intelligence planning.
- Dissertation received an [honorable mention](#) at the International Conference on Automated Planning and Scheduling best dissertation award, 2009.

Palo Alto Research Center

Palo Alto, CA, USA

Visiting Researcher and Summer Intern

Summer 2007

- Investigated various models for scheduling paper through a module-based printing machine (with Haitham Hindi).
- Developed a unified framework, based on network flows, for solving a large variety of job shop scheduling problems capable of handling release time, due date, breakdown, and precedence constraints.

**Department of Industrial Engineering
Arizona State University**

Tempe, AZ, USA

Research Assistant

2002–2003

- Developed analytic and simulation models for airplane boarding (with Rene Villalobos).
- Results were implemented system wide by America West Airlines, now US Airways, in 2003.
- An average decrease of 21.0% in departure delays, in hours per month, was observed in the first three months after incorporating the new boarding strategy.
- Research garnered significant attention and was featured in several national media, including: [The Wall Street Journal](#), [The New York Times](#), [Popular Mechanics](#), and [NPR](#).

ORTEC

Gouda, Netherlands

Junior Consultant

2000–2001

- Developed and implemented several extensions to SprintManager, commercial software used by the express delivery business.
- Extensions were deployed in software upgrades on a continual basis.
- Bug fixing for ORTEC Shortrec, commercial software (used globally) for optimizing transportation and distribution planning.

Dutch National Aerospace Laboratory

Amsterdam, Netherlands

Research Assistant

1999–2000

- Researched models and algorithms for applications in collaborative decision making (CDM), one of the five core technologies in the FAA's free flight program (with Marjan van den Akker and Peter de Waal).
- Developed algorithms for slot swapping and slot shifting, which allows airlines to prioritize flights by exchanging the departure slots of two or more flights.
- Results were presented at the FAA/EUROCONTROL technical interchange meeting on CDM in air traffic management in 2001.

TEACHING

Instructor

- Leeds School of Business, University of Colorado at Boulder.
 - OPIM4050 Supply Chain Management, fall 2008 through spring 2009 (40+ students).
 - OPIM4900 Independent Study, fall 2009 (1 student).

Teaching Assistant/Grader

- Department of Industrial Engineering, Arizona State University.
 - IEE574 Deterministic Operations Research Models, spring 2002 (50+ students).
 - IEE376 Operations Research Techniques/Applications, fall 2001 (30+ students).

SERVICE

Professional

- Program committee member:
 - Conference on Artificial Intelligence (AAAI), 2008, 2010.
 - European Conference on Artificial Intelligence (ECAI), 2010.
 - International Conference on Automated Planning and Scheduling (ICAPS), 2009.
 - International Joint Conference on Artificial Intelligence (IJCAI), 2009.

Academic

- Student representative of the INFORMS Chapters/Fora Committee, 2004–2006.
- Vice President, INFORMS Student Chapter at Arizona State University, 2002.

Public

- Treasurer, Phoenix Chapter of the National Space Society, 2005–2008.
- Treasurer, Mars Society Phoenix Chapter, 2005–2006.
- Coeditor, OR/MS Tomorrow, the INFORMS student newsletter, 2002–2004.
- Treasurer, MSAV Uros, the student association for track and field at Universiteit Maastricht, 1998–1999.
- Coeditor, PerVectum, the magazine for econometricians at Universiteit Maastricht, 1998–1999.
- Track and field coach, Atletiek Vereniging Kimbria, Maastricht, Netherlands, 1996–1999.

COMPUTER SKILLS

- Strong programming skills in C++ and CPLEX Concert Technology. Experience with C, Matlab, and AMPL.
- Familiar with Unix, Linux, and Windows environments.
- LaTeX, Word, Excel, and PowerPoint document preparation.

PERSONAL INTERESTS AND INFORMATION

- Unofficial world record holder in [BATAK](#), a reaction test game, 2009.
- Dutch national student champion. 4x400m Track and Field. Groningen, 2000.
- Fluent in English and Dutch.
- Enjoy exploring the outdoors and playing recreational sports.

RESEARCH

Work in progress

1. Open Pit Mine Production Scheduling (with Thomas Vossen, Alexandra Newman, and Kevin Wood).
2. Optimal Automated Planning (with Thomas Vossen and Subbarao Kambhampati).

Refereed journal articles

1. **M.H.L. van den Briel**, T. Vossen, and S. Kambhampati. 2008. [Loosely Coupled Formulations for Automated Planning: An Integer Programming Perspective](#). *Journal of Artificial Intelligence Research*, Vol. 31, pp. 217-257.
2. **M.H.L. van den Briel**, and S. Kambhampati. 2005. [Optiplan: A Planner Based on Integer Programming \(Engineering note\)](#). *Journal of Artificial Intelligence Research*, Vol. 24, pp. 919-931.
3. **M.H.L. van den Briel**, J.R. Villalobos, G.L. Hogg, T. Lindemann, and A. Mulé. 2005. [America West Airlines Develops Efficient Boarding Strategies](#). *Interfaces*, Vol. 35, No. 3, pp. 191-201.
4. P.R. de Waal, **M.H.L. van den Briel**, and J.M. van den Akker. 2002. [Slot swapping Applications for Collaborative Decision Making](#). *Air Traffic Control Quarterly*, Vol 11, No 1, pp. 65-84.

Refereed conference proceedings

1. E. Capelo, J.L. de Castro Silva, **M.H.L. van den Briel**, and J.R. Villalobos. 2008. [Aircraft Boarding Fine-Tuning](#). In *Proceedings of the 14th International Conference on Industrial Engineering and Operations Management (ICIEOM)*.
2. **M.H.L. van den Briel**, J. Benton, S. Kambhampati, and T. Vossen. 2007. [An LP-Based Heuristic for Optimal Planning](#). In *Proceedings of the 13th International Conference on Principles and Practice of Constraint Programming (CP)*, pp. 651-665.
3. J.Benton, **M.H.L. van den Briel**, and S. Kambhampati. 2007. [A Hybrid Linear Programming and Relaxed Plan Heuristic for Partial Satisfaction Planning Problems](#). In *Proceedings of the 17th International Conference on Automated Planning and Scheduling (ICAPS)*, pp. 34-41.
4. M.B. Do, J. Benton, **M.H.L. van den Briel**, and S. Kambhampati. [Planning with Goal Utility Dependencies](#). In *Proceedings of the 20th International Joint Conference on Artificial Intelligence Planning (IJCAI)*, pp. 1872-1878.
5. **M.H.L. van den Briel**, T. Vossen, and S. Kambhampati. 2005. [Reviving Integer Programming Approaches for AI Planning: A Branch-and-Cut Framework](#). In *Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS)*, pp. 310-319.
6. **M.H.L. van den Briel**, R. Sanchez, M.B. Do, and S. Kambhampati. 2004. [Effective Approaches for Partial Satisfaction \(Over-Subscription\) Planning](#). In *Proceedings of the 24th National Conference on Artificial Intelligence (AAAI)*, pp. 562-569.
7. **M.H.L. van den Briel**, J.R. Villalobos, and G.L. Hogg. [The Aircraft Boarding Problem](#). 2003. In *Proceeding of the 12th Industrial Engineering Research Conference (IERC)*, Nr 2153, CD-ROM.

Other publications

1. **M.H.L. van den Briel**. 2008. [Integer Programming Approaches for Automated Planning](#) (PhD's thesis).
2. **M.H.L. van den Briel**, and S. Kambhampati. 2007. [Fluent merging: A general technique to improve reachability heuristics and factored planning](#). In *Proceedings of the ICAPS Workshop on Heuristics for Domain-independent Planning: Progress, Ideas, Limitations, Challenges*.
3. J. Benton, **M.H.L. van den Briel**, and S. Kambhampati. 2007. [Finding admissible bounds for over-subscription planning problems](#). In *Proceedings of the ICAPS Workshop on Heuristics for Domain-independent Planning: Progress, Ideas, Limitations, Challenges*.
4. **M.H.L. van den Briel**, S. Kambhampati, and T. Vossen. 2006. [Planning with Preferences and Trajectory Constraints by Integer Programming](#). In *Proceedings of the ICAPS Workshop on Preferences and Soft Constraints in Planning*, pp. 19-22.
5. **M.H.L. van den Briel**, R. Sanchez, and S. Kambhampati. 2004. [Over-Subscription in Planning: A Partial Satisfaction Problem](#). In *Proceedings of the ICAPS Workshop on Integrating Planning into Scheduling*, pp. 91-98.
6. **M.H.L. van den Briel**. 2000. [Algorithms for CDM on Slot Allocation: Slot Swapping and Slot Shifting](#) (Master's thesis).

Conference presentations

1. **M.H.L. van den Briel**, T. Vossen. 2009. Optimal Automated Planning. *INFORMS Annual Meeting 2009*. San Diego, California, USA.
2. **M.H.L. van den Briel**, T. Vossen, S. Kambhampati, and J.W. Fowler. 2008. Artificial Intelligence Planning and Operations Research (invited contribution). *INFORMS Annual Meeting 2008*. Washington, District of Columbia, USA.
3. **M.H.L. van den Briel**, and J.R. Villalobos. 2006. How to Board a 150 Seat Airplane in Less Than 15 Minutes? (invited contribution) *21st European Conference on Operational Research*. Reykjavik, Iceland.
4. T. Vossen, **M.H.L. van den Briel**, and S. Kambhampati. 2005. A Branch-and-Cut Framework for Artificial Intelligence Planning. *9th INFORMS Computing Society Conference*. Annapolis, Maryland, USA.
5. **M.H.L. van den Briel**, J.R. Villalobos, and A. Keha. 2004. Improved Group Configurations for Zone/Group Boarding. *INFORMS Annual Meeting 2004*. Denver, Colorado, USA.
6. **M.H.L. van den Briel**, J.R. Villalobos, and G.L. Hogg. 2003. Efficient Airplane Boarding Strategies. *INFORMS Annual Meeting 2003*. Atlanta, Georgia, USA.
7. P.R. de Waal, **M.H.L. van den Briel**, and J.M. van den Akker. 2001. Slot Swapping Applications for CDM (invited contribution). *FAA/EUROCONTROL Technical Interchange Meeting on CDM in Air Traffic Flow Management*. Reston, Virginia, USA.

MEDIA COVERAGE

Newspapers

- P. Finney. November 14, 2006. [Loading an airliner is rocket science](#). *The New York Times*. p. C1.
- D. Price. August 26, 2006. Airlines trying to speed up boarding. *The News and Observer*. p. B1.
- P. Bernau. July 10, 2006. [Auf die Plätze, Passagiere!](#) *Financial Times Deutschland*. p. 30.
- G. Stoller. June 27, 2006. [Getting fliers on jets faster](#). *USA TODAY*. p. B5.
- H. Stil. June 23, 2006. Instappen in vliegtuigen kan sneller. *Het Parool*. p. 22-23.
- B. Bigelow. June 21, 2006. [No 'cattle car'? Southwest plans S.D. boarding tests](#). *The San Diego Union-Tribune*. p. A1 (front page).
- D. Bear and A. Sostek. June 18, 2006. [There's more than one way to fill a plane](#). *Pittsburgh Post-Gazette*. p. A1 (front page).
- T. Ramstack. April 23, 2006. Manned mission to 'Mars', *The Washington Times*. p. A1 (front page).
- R. Yu. January 10, 2006. [Airlines change how they herd us aboard](#). *USA TODAY*. p. B1.
- Nicolas Zamiska. November 2, 2005. [Plane Geometry: Scientists Help Speed Boarding of Aircraft](#). *The Wall Street Journal*. p. A1 (front page).
- H. Mattern. May 1, 2003. AmWest hopes new boarding procedure will save time for all involved. *The Arizona Republic*. p. B1.

Magazines

- T. Hayden. January, 2008. [10 Ways to Fix Air Travel](#). *Popular Mechanics*. p. 85.
- A. Turkenburg. January, 2007. De Instapprof. *Elsevier Thema*. p. 15.
- T. Hayden. June, 2006. [Now Boarding, Fast](#). *Wired*. p. 32.

Radio

- Day to day. June 21, 2006. [Plane Truth: Seating Passengers Is a Pain](#). *National Public Radio*.

Internet

- D. Nelson. September 21, 2009. [The Fastest Man Alive?](#) *Quotronics Limited*.
- D. Reed and R. Yu. June 20, 2006. [Northwest tries first-in-line boarding](#). *USA TODAY*.
- D. Demerjian. May 9, 2006. [Airlines Try Smarter Boarding](#). *Wired News*.

REFERENCES

Feel free to contact any of my referees.

Contact info has been removed for this online version.