Eyjólfur Ingi Ásgeirsson

Associate Professor
Reykjavík University
School of Science and Engineering
Menntavegur 1
101 Reykjavík, Iceland

Phone: (+354) 599.6385
Fax: (+354) 599.6201
Email: eyjo@ru.is
Homepage: http://www.ru.is/faculty/eyjo/

Google Scholar profile page: http://scholar.google.com/citations?user=FQPAsuwAAAAJ

Education

Ph.D. Operations Research, Columbia University, 2007.

Dissertation: On the performance of simple algorithms for solving NP-hard problems.

Advisor: Prof. Cliff Stein.

M.Sc. Operations Research, Columbia University, 2002.

B.Sc. Computer Science, University of Iceland, 1999.

C.Sc. Mechanical and Industrial Engineering, University of Iceland, 1998.

Employment

Associate Professor, Reykjavík University, School of Science and Engineering, Sept 2016 – present.

Assistant Professor, Reykjavík University, School of Science and Engineering, Jan 2007 – Sept 2016.

Undergraduate Courses: Intro to Operations Research, Operations Research II, Programming (c++), Data Processing.

Masters Level Courses: Optimization Methods, Optimization Applications, Simulation.

Other Work Experience

Programmer & Software Designer, AGR, Reykjavík, Iceland. Jan 1999 – Sep 2000, May 2001 – Sep 2001, 2003 – 2007. Consulting: 2007–2014.

Lecturer/Instructor, Reykjavík University, School of Business. 2005 – 2006.

Courses: Operation Management, Operations Research.

Teaching Assistant, Columbia University, IEOR Department, NY, USA, Sep 2002 – May 2005.

Courses: Mathematical Programming, Analysis of Algorithms, Applied Integer Programming, Production Scheduling.

Programmer & Data analyst, Calidris Ldt, Reykjavík, Iceland. Jun 2002 – Sep 2002.

Database Programmer, US Army Base, Keflavík, Iceland. Jun 1996 – Sep 1996, Jun 1997 – Sep 1997.

Journal Publications

13) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2017). Energy, economic, and mitigation cost implications of transition toward a carbon-neutral transport sector: A simulation-based comparison between hydrogen and electricity. *Journal of Cleaner Production*, Vol. 141 (237–247).

12) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson, E. I. Ásgeirsson and D.R. Keith (2016). Analysis of Supply-Push Strategies Governing the Transition to Biofuel Vehicles in a Market-Oriented Renewable Energy System. *Energy*, Vol. 94 (409–421).

11) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2015). Cost-effectiveness and Potential of Greenhouse Gas Mitigation through the Support of Renewable Transport Fuels in Iceland. *Renewable Energy in the Service of Mankind Vol I: Selected Topics from the World Renewable Energy Congress WREC 2014*.

10) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2015). Comparative Analysis of Hydrogen, Biofuels and Electricity Transitional Pathways to Sustainable Transport in a Renewable-Based Energy System. *Energy*, Vol. 83 (614–627).

9) E. I. Ásgeirsson and G. L. Sigurðardóttir (2014). Near-optimal MIP solutions for preference based self-scheduling. *Annals of Operations Research* (1–21).

8) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2014). Potential impact of transition to a low-carbon transport system in Iceland. *Energy Policy*, Vol. 69 (127–142).

7) E. Shafiei, H. Stefánsson, E. I. Ásgeirsson, B. Davíðsdóttir and M. Raberto (2013). Integrated Agent-based and System Dynamics Modelling for Simulation of Sustainable Mobility. *Transport Reviews*, Vol. 33, Issue 1 (44–70).

6) A. Ólafsson, S. Margeirsson, E. I. Ásgeirsson, H. Stefánsson, P. Jensson, R. Guðmundsson and S. Arason (2013). Quantitative Methods For Decision Support In The Icelandic Fishing Industry. *Natural Resource Modeling*, Vol. 26, Issue 3 (365–384).

5) E. Shafiei, H. Thorkelsson, E. I. Ásgeirsson, B. Davidsdottir, M. Raberto and H. Stefánsson (2012). An agent-based modeling approach to predict the evolution of market share of electric vehicles: a case study from Iceland. *Technological Forecasting and Social Change*, Vol. 79, Issue 9 (1638–1653).

4) E. I. Ásgeirsson (2012). Bridging the gap between self schedules and feasible schedules in staff scheduling. *Annals of Operations Research* (1–19).

3) E. I. Ásgeirsson and C. Stein (2009). Bounded-space online bin cover. *Journal of Scheduling*, Vol. 12 (461–474).

2) E. I. Ásgeirsson and C. Stein (2009). Divide-and-Conquer Approximation Algorithm for Vertex Cover. *SIAM Journal on Discrete Mathematics*, Vol. 23 (1261–1280).

1) E. I. Ásgeirsson, U. Ayesta, E. Coffman, J. Etra, P. Momčilovič, D. Phillips, V. Vokhshoori, Z. Wang and J. Wolfe (2002). Closed on-line bin packing. *Acta Cybernetica*, Vol. 15, Issue 3 (361–367).

Conference Publications

23) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2016). Implications of Transition to a Carbon-Neutral Transport Sector for Alternative Fuel Markets. *Energy Systems Conference: 21st Century Challenges*.

22) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2016). Transition to a 100% Renewable Transport Fuel System and Implications for Economic Costs and Greenhouse Gas Mitigation: A Simulation-Based Comparison between Hydrogen and Electricity. *39th Annual IAEE International Conference*.

21) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2015). Economic Impact of Adaptation to Climate Change in Iceland's Energy Supply Sector. *Proceedings of the 12th International Conference on the European Energy Market (EEM)*.

20) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2015). Simulation of Alternative Fuel Markets using Integrated System-Dynamics Model of Energy System. *Proceedings of the 15th International Conference on Computational Science (ICCS), Procedia Computer Science, Elsevier*.

19) H. Gudmundsdottir, E. I. Ásgeirsson, M. Bodlaender, J. T. Foley, M. M. Halldórsson and Y. Vigfusson (2014). Extending Wireless Algorithm Design to Arbitrary Environments via Metricity. *Proceedings of the 17th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)* (275–284).

18) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2014). System Dynamics Modeling of Pathways to a Sustainable Transport in Iceland. *Proceedings of the International Annual Conference of the German OR Society*.

17) E. Shafiei, B. Davíðsdóttir, J. Leaver, H. Stefánsson and E. I. Ásgeirsson (2014). Cost-effectiveness and Potential of Greenhouse Gas Mitigation through the Support of Renewable Transport Fuels in Iceland. *World Renewable Energy Congress (WREC)*.

16) E. I. Ásgeirsson, M. M. Halldórsson and P. Mitra (2014). Maximum MIMO Flow in Wireless Networks Under the SINR Model. *Proceedings of the 12th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOPT)* (295–302).

15) E. Shafiei, H. Stefánsson, E. I. Ásgeirsson and B. Davíðsdóttir (2012). Market Penetration of Alternative Fuel Vehicles in Iceland: A Hybrid Modeling Approach. *Proceedings of the International Annual Conference of the German OR Society* (437–442).

14) E. Shafiei, H. Stefánsson, E. I. Ásgeirsson, B. Davíðsdóttir and M. Raberto (2012). A hybrid modeling framework for diffusion of alternative fuel vehicles. *Proceedings of the 2nd IEEE International Energy Conference and Exhibition (ENERGYCON)* (1071–1076).

13) E. I. Ásgeirsson and G. L. Sigurðardóttir (2012). Near-Optimal MIP Solutions for Preference Based Self-Scheduling. *Proceedings of the 8th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*.

12) N. Kyngäs, K. Nurmi, E. I. Ásgeirsson and J. Kyngäs (2012). Using the PEAST algorithm to roster nurses in an intensive-care unit in a Finnish hospital. *Proceedings of the 8th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*.

11) E. I. Ásgeirsson, M. M. Halldórsson and P. Mitra (2012). Wireless network stability in the SINR model. *Proceedings of the 19th International Colloquium on Structural Information and Communication Complexity (SIROCCO)* (123–134).

10) E. I. Ásgeirsson, M. M. Halldórsson and P. Mitra (2012). A fully distributed algorithm for throughput performance in wireless networks. *Proceedings of the 46th Annual Conference on Information Sciences and Systems (CISS)* (1–5).

9) E. I. Ásgeirsson, M. M. Halldórsson and P. Mitra (2012). Brief Announcement: Distributed Algorithms for Throughput Performance in Wireless Networks. *Proceedings of the 2012 ACM Symposium on Principles of Distributed Computing (PODC)* (89–90).

8) E. I. Ásgeirsson, J. Kyngäs, K. Nurmi and M. Stølevik (2011). A Framework for Implementation-Oriented Staff Scheduling. *Proceedings of the 5th Multidiciplinary International Scheduling Conference: Theory and Applications (MISTA)* (308–321).

7) E. I. Ásgeirsson, G. S. Axelsdottir and H. Stefánsson (2011). Automating a manual production scheduling process at a pharmaceutical company. *IEEE Symposium Series in Computational Intelligence, Workshop on Computational Intelligence in Production and Logistics Systems (CIPLS)* (1–8).

6) E. I. Ásgeirsson and P. Mitra (2011). On a game theoretic approach to capacity maximization in wireless networks. *Proceedings of the 30th IEEE International Conference on Computer Communications (INFOCOM)* (3029–3037).

5) E. I. Ásgeirsson (2010). Bridging the gap between self schedules and feasible schedules in staff scheduling. *Proceedings of the 8th International Conference on the Practice and Theory of Automated Timetabling (PATAT)* (81–96).

4) E. I. Ásgeirsson and C. Stein (2007). Vertex Cover Approximations on Random Graphs. *Proceedings of the 6th International Workshop on Experimental and Efficient Algorithms (WEA)* (285–296).

3) E. I. Ásgeirsson and C. Stein (2006). Using Markov Chains To Design Algorithms For On-Line Bounded-Space Bin-Cover. *Proceedings of the ACM-SIAM Workshop on Algorithm Engineering and Experiments (ALENEX)* (75–85).

2) E. I. Ásgeirsson and C. Stein (2005). Vertex Cover Approximations: Experiments and Observations. *Proceedings of the 4th International Workshop on Experimental and Efficient Algorithms (WEA)* (545–557).

1) E. I. Ásgeirsson, J. Berry, C. A. Phillips, D. J. Phillips, C. Stein and J. Wein (2004). Scheduling an Industrial Production Facility. *Proceedings of the 10th Conference on Integer Programming and Combinatorial Optimization (IPCO)* (116–131).

Other Publications

5) H. Gudmundsdottir, E. I. Ásgeirsson, M. Bodlaender, J. T. Foley, M. M. Halldórsson, G. M. Järvelä, H. Ulfarsson and Y. Vigfusson (2014). Measurement Based Interference Models for Wireless Scheduling Algorithms. *arXiv preprint arXiv:1401.1723*.

4) R. M. Ragnarsson, H. Stefánsson and E. I. Ásgeirsson (2011). Meta-Heuristics in Multi-Core Environments. *Systems Engineering Procedia*, Vol. 1 (457–464).

3) H. Stefánsson, E. I. Ásgeirsson and S. Ólafsson (2010). Icelandic Operations Research Society. *Wiley Encyclopedia of Operations Research and Management Science*.

2) S. Arason, E. I. Ásgeirsson, B. Margeirsson, S. Margeirsson, P. Olsen and H. Stefánsson (2010). Decision support systems for the food industry. *Handbook on Decision Making* (295–315).

1) E. I. Ásgeirsson (2007). On the Performance of Simple Algorithms for Solving NP-hard Problems. *Department of Industrial Engineering and Operations Research, Columbia University*.

Conference Participation, seminars and invited talks

Energy Systems Conference - 21st Century Challenges - London, UK.
Presentation & publication.

CDIO European Regional Meeting 2016 - Inventing Tomorrow's Engineering Education - Delft, The Netherlands.

ICE-TCS Research Seminar Series, February 19. 2016 - Reykjavík, Iceland. *Seminar talk.*

EEM 2015 - 12th Internacional Converence on the European Energy Market - Lisbon, Portugal.
Presentation & publication.

MAPSP 2015 - 12th Workshop on Models and Algorithms for Planning and Scheduling Problems - La Roche-en-Ardenne, Belgium.
Program committee.

ICCS 2015 - 15th International Conference on Computational Science - Reykjavík, Iceland.
Publication.

ICE-TCS Research Seminar Series, February 20. 2015 - Reykjavík, Iceland. *Seminar talk.*

MSWiM 2014 - 17th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems - Montreal, Canada.
Presentation, publication & session chair.

WREC 2014 - World Renewable Energy Congress - London, UK.
Presentation & publication.

IFORS 2014 - 20th Conference of the International Federation of Operational Research Societies - Barcelona, Spain.
Presentation & abstract.

WiOpt 2014 - 12th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks - Hammamet, Tunisia.
Presentation & publication.

Dagstuhl - Jan 2014 - Algorithms for Wireless Communication - Dagstuhl, Germany.

MAPSP 2013 - 11th Workshop on Models and Algorithms for Planning and Scheduling Problems - Pont a Mousson, France.
Presentation & abstract.

ICE-TCS Research Seminar Series, February 15. 2013 - Reykjavík, Iceland.

EnergyCon 2012 - IEEE International Energy Conference & Exhibition - Florence, Italy.
Presentation & publication.

PATAT 2012 - 9th International Conference on the Practice and Theory of Automated Timetabling - Son, Norway.
Presentation & publication.

ISMP 2012 - 21st International Symposium on Mathematical Programming - Berlin, Germany.
Invited talk & abstract.

U.S. Naval Academy - Math Department Colloquium - March 30. 2012 - Annapolis, USA.
Invited talk.

ICE-TCS Research Seminar Series, February 10. 2012 - Reykjavík, Iceland
Seminar talk.

ASDOM 2011 - International Workshop on Advances in Simulation-Driven Optimization and Modeling - Reykjavík, Iceland.
Presentation.

MAPSP 2011 - 10th Workshop on Models and Algorithms for Planning and Scheduling Problems - Nymburk, Czech Republic.
Presentation & abstract.

ICE-TCS Research Seminar Series, March 18. 2011 - Reykjavík, Iceland
Seminar talk.

INFOCOM 2011 - The 30th IEEE International Conference on Computer Communications - Shanghai, China.
Presentation & publication.

PATAT 2010 - 8th International Conference on the Practice and Theory of Automated Timetabling - Belfast, Northern Ireland.
Presentation & publication.

SWAT 2010 - 12th Scandinavian Symposium and Workshops on Algorithm Theory - Bergen, Norway.

WRAWN 2010 - Workshop on Realistic Models for Algorithms in Wireless Networks - Bergen, Norway.

MAPSP 2009 - 9th Workshop on Models and Algorithms for Planning and Scheduling Problems - Abbey Rolduc, The Netherlands.
Presentation & abstract.

INFORMS 2008 - Informs Annual Meeting - Washington DC, USA
Abstract.

ICE-TCS Research Seminar Series, January 11. 2008 - Reykjavík, Iceland
Seminar talk.

EURO 2007 - 22nd European Conference on Operational Research - Prague, Czech Republic.
Presentation & abstract.

MAPSP 2007 - 8th Workshop on Models and Algorithms for Planning and Scheduling Problems - Istanbul, Turkey.
Presentation & abstract.

WEA 2007 - 6th Workshop on Experimental Algorithms - Rome, Italy.
Presentation & publication.

EURO 2006 - 21st European Conference on Operational Research - Reykjavík, Iceland.
Presentation & abstract.

ALENEX 2006 - 8th Workshop on Algorithm Engineering and Experiments - Miami, USA.
Presentation & publication.

ICE-TCS Research Seminar Series, November 22. 2006 - Reykjavík, Iceland
Seminar talk.

WEA 2005 - 4th International Workshop on Efficient and Experimental Algorithms - Santorini, Greece.
Presentation & publication.

IPCO 2004 - 10th International Conference on Integer Programming and Combinatorial Optimization - New York, USA.
Presentation & publication.

Grants

Icelandic Centre for Research (RANNIS), The Icelandic Research Fund, 2016. Co-applicant. Principal Investigator: Brynhildur Davíðsdóttir. Project grant for 42 million ISK over three years. Project: "Trajectories towards a sustainable energy future".

Icelandair Research Fund (2016). Co-PI along with Hlynur Stefánsson. M.Sc. project grant for 1 million ISK. Project: "Analytical methods for revenue management and price optimization at Icelandair Hotels".

LS Retail Research Fund (2016). Co-PI along with Hlynur Stefánsson. M.Sc. project grant for 1.82 million ISK. Project: "Churn prediction and customer segmentation".

LS Retail Research Fund (2016). Co-PI along with Hlynur Stefánsson. M.Sc. project grant for 1.82 million ISK. Project: "Basket analysis and customized offers".

Icelandic Centre for Research (RANNIS), The Icelandic Research Fund, 2015. Co-applicant. Principal Investigator: Magnús Már Halldórsson. Project grant for 9 million ISK/year for a period of three years. Project: "Models of Unreliability and Dynamics in Wireless Networks".

Icelandic Centre for Research (RANNIS), Student Innovation Fund, 2014. Grant for 3 students for a total of 9 months (1.53 million ISK). Project: "Matardagbók með sjálfvirkri myndgreiningu".

Icelandic Centre for Research (RANNIS), Student Innovation Fund, 2014. Grant for 1 student for 3 months (510 thousand ISK). Project: "Magnbundin aðferðafræði við greiningu á launamyndun fyrirtækja út frá jafnréttissjónarmiðum".

Icelandic Centre for Research (RANNIS), Student Innovation Fund, 2013. Grant for 2 students for a total of 6 months (1020 thousand ISK). Project: "Tengsl og hreyfanleiki í þráðlausum grannnetum".

Icelandic Centre for Research (RANNIS), The Technology Development Fund, 2011. Project grant for 9 million ISK/year for a period of three years.

Icelandic Centre for Research (RANNIS), The Icelandic Research Fund, 2011. Co-applicant. Principal Investigator: Magnús Már Halldórsson. Grant of excellence for 60 million ISK for a period of three years. Project: Design of Ad-Hoc Wireless Networks.

Icelandic Centre for Research (RANNIS), The Equipment Fund, 2011. Co-applicant. Principal Investigator: Andrei Manolescu. Equipment: Computer cluster for multidisciplinary scientific research. 11.339.000 ISK.

Student supervision

Co-Supervisor - MSc Student Lilja Björg Guðmundsdóttir, Thesis title: "Exploring the Diffusion of Alternative Fuel Vehicles in Iceland using System Dynamics Simulation", 2016.

Co-Supervisor - MSc Student Hrafnhildur Ýr Matthíasdóttir, Thesis title: "Production Scheduling in the TMC in Marel Iceland", 2016.

Co-Supervisor - MSc Student Hanna María Hermannsdóttir, Thesis title: "Optimisation of stand allocation in Keflavik international airport", 2015.

Supervisor - MSc Student Skúli Magnús Sæmundssen, Thesis title: "Integer and Stable Marriage Models for Assignment to Preschools", 2014.

Co-Supervisor - MSc Student Ninna Björg Ólafsóttir, Thesis title: "Wind Optimization of Flight Profiles through the Reykjavik Control Area", 2014.

Co-Supervisor - MSc Student Rannveig Guðmundsdóttir, Thesis title: "Production scheduling in a flexible flowshop environment", 2012.

Co-Supervisor - MSc Student Kamilla Reynisdóttir, Thesis title: "Linear optimization model that maximizes the value of pork products", 2012.

Co-Supervisor - MSc Student Fanney Björg Sveinsdóttir, Thesis title: "Aggregate planning for slaughterhouses using mixed integer optimization", 2012.

Co-Supervisor - MSc Student Einar Ingvi Andrésson, Thesis title: "Lateral optimization of aircraft tracks in the Reykjavik air traffic control area", 2012.

Supervisor - MSc student Guðríður Lilla Sigurðardóttir, Thesis title: "Near optimal staff scheduling using a MIP model", 2011.

Supervisor - MSc student Þórður Óskarsson, Thesis title: "The Capacity Problem for Wireless Communications under the SINR Model", 2011.

Co-Supervisor - MSc student Ragnar Magnús Ragnarsson, Thesis title: "Meta-heuristics in Multi-core environments", 2011.

Co-Supervisor - MSc student Héðinn Þorkelsson, Thesis title: "Policy Scenarios for the Evolution of Market Share of Electric Cars, an Agent-based Approach", 2010.

Co-Supervisor - MSc Student Jóhann Sigurðsson, Thesis title: "Economic Effect of Implementing Electric Cars", 2010.

Supervisor - MSc Student Ari Ólafsson, Thesis title: "Data Collection and Use in the Icelandic Fishing Industry", 2010.

Co-Supervisor - MSc Student Guðrún Sjöfn Axelsdóttir, Thesis title: "Automating the manual process of scheduling jobs in prepared plans for a pharmaceutical company", 2010.

Boards and Committees

Member of the Research Council of the School of Science and Engineering at Reykjavík University (2008 – 2012).

Member of the Curriculum Council of the School of Science and Engineering at Reykjavík University (2009 – present).

Member of the Study Evaluation Committee of the School of Science and Engineering at Reykjavík University (2014 – present).

Member of the board of directors for the startup company 3Z Pharmaceuticals.

Professional Activities

MAPSP 2015 (12th Workshop on Models and Algorithms for Planning and Scheduling Problems) - Program committee member.

Treasurer for the Operational Research Society of Iceland (ARFÍ).

Reviewer for: *ACM Transactions On Algorithms, European Journal of Operational Research, Energy, Information Processing Letters, The Computer Journal, Journal of Scheduling, Journal of Experimental Algorithms, European Symposium on Algorithms, International Symposium on Algorithms and Computation, Journal of Discrete Algorithms, Journal of Technological Forecasting & Social Change, Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), Journal of the Operational Research Society, Journal of Transportation Research Part A: Policy and Practice.*

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