Dr. Dmytro Matsypura, PhD

CURRICULUM VITAE

Discipline of Business Analytics
The University of Sydney
Room 4089, Abercrombie Building
Sydney, NSW 2006, Australia

phone: +61-448-770-457
email: dmytro.matsypura@sydney.edu.au

Education

◇ 2006 - **PhD in Management Science**, University of Massachusetts Amherst, MA, USA

◇ 2000 - **Master in Information Systems**, Kyiv Polytechnic Institute, Kyiv, Ukraine

◇ 1998 - **Bachelor of Business Administration**, Kyiv Polytechnic Institute, Kyiv, Ukraine

Experience

◇ 2020 - present: Associate Professor, Discipline of Business Analytics, The University of Sydney

◇ 2013 - 2019: Senior Lecturer, Discipline of Business Analytics, The University of Sydney

◇ 2007 - 2012: Lecturer, Discipline of Operations Management and Econometrics, The University of Sydney

◇ 2001 - 2006: Graduate Research/Teaching Assistant, Department of Finance and Operations Management, University of Massachusetts Amherst

Awards

◇ INFORMS ENRE Best Publication in Environment and Sustainability Award, 2019.

◇ Teaching Excellence Award, Discipline of Business Analytics, 2018.

◇ Teaching Excellence Award, Discipline of Business Analytics, 2013.

◇ Wayne Lonergan Outstanding Teaching Award, The University of Sydney Business School, 2010.

◇ Teaching Excellence Award, Discipline of Operations Management and Econometrics, 2008.

◇ AT&T Foundation Industrial Ecology Fellowship, AT&T, United States, 2002.

◇ AT&T Foundation Industrial Ecology Fellowship, AT&T, United States, 2001.

Publications

Refereed journal articles

1. Chan R, Li Z and **Matsypura D** 2019, 'Assortment optimisation problem: a distribution-free approach', *Omega: The International Journal of Management Science*, forthcoming.

2. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2019, 'Exact IP-based approaches for the longest induced path problem', *European Journal of Operational Research*, vol. 278:2, pp. 546-562.

3. **Matsypura D**, Prokopyev O and Zahar A 2018, 'Wildfire fuel management: network-based models and optimization of prescribed burning', *European Journal of Operational Research*, vol.264:2, pp.774-96.

    ◇ Best Publication in Environment and Sustainability Award, INFORMS ENRE Society (2019)

4. **Matsypura D**, Thompson R and Vasnev A 2018, 'Optimal selection of expert forecasts with integer programming', *Omega: The International Journal of Management Science*, vol. 78, pp. 165-175.

5. **Matsypura D**, Neo E and Prokhorov A 2016, 'Estimation of Hierarchical Archimedean Copulas as a Shortest Path Problem', *Economics Letters*, vol. 149, pp. 131-4.

6. **Matsypura D** and Pauwels L 2016, 'Does portfolio margining make borrowing more attractive?', *International Review of Financial Analysis*, vol. 43, pp. 128-34.

7. Kalinowski T, **Matsypura D** and Savelsbergh MWP 2015, 'Incremental network design with maximum flows', *European Journal of Operational Research*, vol. 242:1, pp. 51-62.

8. **Matsypura D** and Timkovsky VG 2013, 'Integer programs for margining option portfolios by option spreads with more than four legs', *Computational Management Science*, vol. 10:1, pp. 51-76.

9. **Matsypura D** and Timkovsky VG 2012, 'Margining option portfolios by network flows', *Networks*, vol. 60:2, pp. 120-31.

10. Coffman, Jnr EG, **Matsypura D** and Timkovsky VG 2010, 'Strategy vs risk in margining portfolios of options', *4OR (Quarterly Journal of Operations Research)*, vol. 8:4, pp. 375-86.

11. Cruz J and **Matsypura D** 2009, 'Supply chain networks with corporate social responsibility through integrated environmental decision-making', *International Journal of Production Research*, vol. 47:3, pp. 621-48.

12. **Matsypura D**, Nagurney A and Liu Z 2007, 'Modeling of electric power supply chain networks with fuel suppliers via variational inequalities', *International Journal of Emerging Electric Power Systems*, vol. 8:1.

13. **Matsypura D**, Alves J, Lovelace K, Manz F, Toyasaki F and Ke K 2006, 'A cross-cultural perspective of self-leadership', *Journal of Managerial Psychology*, vol. 21:4, pp. 338-359.

14. **Matsypura D** and Nagurney A 2005, 'Global supply chain network dynamics with multicriteria decision-making under risk and uncertainty', *Transportation Research: Part E*, vol. 41:6, pp. 585-612.

15. **Matsypura D**, Nagurney A and Cruz J 2003, 'Dynamics of global supply chain supernetworks', *Mathematical and Computer Modelling*, vol. 37, pp. 963-983.

Working papers

1. Leung J and **Matsypura D**, 'Sparse multi-class classification with application to insurance industry.'

2. Leung J and **Matsypura D**, 'Testing for structural stability in partial correlation networks.'

3. Gillen C, **Matsypura D** and Prokopyev O, 'Wildfire fuel management.'

4. **Matsypura D**, Prokopyev O and Veremyev A, 'The longest induced path problem and its applications.'

Book sections

1. Gillen C, **Matsypura D** and Prokopyev O 2017 'Operations research techniques in wildfire fuel management' in Optimization Methods and Applications: In Honor of Ivan V. Sergienko's 80th Birthday, ed. S. Butenko, P.M. Pardalos, and V. Shylo, Springer, pp. 119-135.

2. Coffman Jnr. EG, **Matsypura D** and Timkovsky VG 2010 'A Computational Study of Margining Portfolios of Options by Two Approaches' in Information Systems, Technology and Management: 4th International Conference, ICISTM 2010, Bangkok, Thailand, March 2010 Proceedings, ed. Prasad S.K, Vin H.M, Sahni S, Jaiswal M.P & Thipakorn B, Springer-Verlag, Heidelberg, Germany, pp. 325-332.

3. Nagurney A and **Matsypura D** 2007 'A supply chain network perspective for electric power generation, supply, transmission, and consumption' in Optimisation, Econometric and Financial Analysis, ed. E.J Kontoghiorghes and C Gatu, Springer-Verlag, Berlin, Germany, pp. 3-27.

4. **Matsypura D** and Nagurney A 2006 'Dynamics of global supply chain supernetworks in a new era of risk and uncertainty' in Transportation Economics: Towards better Performing Transport Systems, ed. B. Jourquin et al, Routledge.

Refereed conference proceedings

1. **Matsypura D** and Timkovsky VG 2012 'Combinations of option spreads', *1st International Conference on Operations Research and Enterprise Systems ICORES 2012*, Vilamoura, Algarve, Portugal, 6th February 2012.

2. **Matsypura D** and Timkovsky VG 2012 'Margining Component of the Stock Market Crash of October 2008: A Lesson of a Straggle with Combinatorial Complexity', *1st International Conference on Operations Research and Enterprise Systems ICORES 2012*, Vilamoura, Algarve, Portugal, 6th February 2012.

3. Coffman Jnr. EG, **Matsypura D** and Timkovsky VG 2010 'A Computational Study of Margining Portfolios of Options by Two Approaches', *4th International Conference on Information Systems, Technology and Management ICISTM 2010*, Bangkok, Thailand, 13th March 2010.

4. **Matsypura D** and Nagurney A 2004 'A supply chain network perspective for electric power generation, supply, transmission, and consumption', Proceedings of the *International Conference in Computing, Communications and Control Technologies*, Austin Texas, United States, 1st January 2004-31st December 2004.

Selected invited talks

◇ 'Wildfire Fuel Management: Network-Based Models and Optimization of Prescribed Burning', Isenberg School of Management, University of Massachusetts Amherst, 2017

◇ 'Incremental Network Design with Maximum Flows', Department of Industrial Engineering, University of Pittsburgh, 2013

◇ 'Incremental Network Design with Maximum Flows', Department of Industrial and Systems Engineering, University of Iowa, 2013

◇ 'Incremental Network Design with Maximum Flows', Singapore Management University, 2013

◇ 'Margining Option Portfolios by Network Flows', Isenberg School of Management, University of Massachusetts Amherst, 2010

◇ 'Margining Option Portfolios by Network Flows', Department of Operations and Information Management, University of Connecticut, 2010

Conference presentations

1. Leung J and **Matsypura D**, 'Identifying (un-)profitable customers: Discrete Dantzig Selector with Hinge Loss', 30th European Conference on Operational Research, Dublin, Ireland, 23-26 June 2019.

2. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2018 'Exact IP-based Approaches for the Longest Induced Path Problem', *INFORMS Annual Meeting*, Phoenix, USA, 4-7 November 2018.

3. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2018 'Exact IP-based Approaches for the Longest Induced Path Problem', Data and Decisions, University of Arizona, Tucson, USA, 1-2 November 2018.

4. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2018 'Exact IP-based Approaches for the Longest Induced Path Problem', 29th European Conference on Operational Research, Valencia, Spain, 8-11 July 2018.

5. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2018 'Exact IP-based Approaches for the Longest Induced Path Problem', 23nd International Symposium on Mathematical Programming ISMP, Bordeaux, France, 1-6 July 2018.

6. **Matsypura D**, Veremyev A, Prokopyev O and Pasiliao E 2017 'Maximum Induced Path of a Graph', *INFORMS Annual Meeting*, Houston, United States, 22-25 October 2017.

7. **Matsypura D**, Prokopyev O and Zahar A 2017 'Wildfire Fuel Management: Network-Based Models and Optimization of Prescribed Burning', Symposium on Systems Analysis in Forest Resources, Seattle, United States, 27-30th August 2017.

8. **Matsypura D**, Prokopyev O and Zahar A 2017 'Wildfire Fuel Management: Network-Based Models and Optimization of Prescribed Burning', 3d International Dynamics of Disasters Conference, Kalamata, Greece, 5-9th July 2017.

9. **Matsypura D**, Prokopyev O and Zahar A 2016 'Using Critical Element Detection in Graphs for Wildfire Fuel Management', *INFORMS Annual Meeting*, Nashville, United States, 13-16th November 2016.

10. **Matsypura D**, Prokopyev O and Zahar A 2016 'Wildfire Fuel Management: Optimization of Prescribed Burning', 28th European Conference on Operational Research, Poznan, Poland, 3-6th July 2016.

11. **Matsypura D** and Prokopyev O 2015 'A Network-based Approach to Bushfire Fuel Management', *MODSIM*, Gold Coast, Australia, 29th November 2015.

12. **Matsypura D** and Prokopyev O 2015 'A Network-based Approach to Bushfire Fuel Management', *INFORMS Annual Meeting*, Philadelphia, United States, 4th November 2015.

13. **Matsypura D** and Prokopyev O 2015 'A Robust Optimisation Approach to Bushfire Fuel Management', 22nd International Symposium on Mathematical Programming ISMP 2015, Pittsburgh, United States, 17th July 2015.

14. **Matsypura D**, Kalinowski T and Savelsbergh M 2013 'Incremental Network Design with Maximum Flows', *INFORMS Annual Meeting*, Minneapolis, United States, 9th October 2013.

15. Pauwels L and **Matsypura D** 2013 'Stock Market Margin Requirement and the 2008 Financial Crisis', *INFORMS Annual Meeting*, Minneapolis, United States, 9th October 2013.

16. **Matsypura D**, Savelsbergh M and Kalinowski T 2013 'Incremental Network Design with Maximum Flows', 26th European Conference on Operational Research, Rome, Italy, 4th July 2013.

17. **Matsypura D**, Kalinowski T and Savelsbergh M 2012 'Incremental Network Design with Maximum Flows', *INFORMS Annual Meeting*, Phoenix, United States, 17th October 2012.

18. **Matsypura D** and Timkovsky VG 2011 'Combinations of Option Spreads', *INFORMS Annual Meeting*, Charlotte, United States, 16th November 2011.

19. **Matsypura D** and Timkovsky VG 2010 'Margining Option Portfolios by Offsets with Two, Three and Four Legs', *INFORMS Annual Meeting*, Austin, United States, 10th November 2010.

20. Coffman Jnr EG, **Matsypura D** and Timkovsky VG 2009 'Portfolio margining: strategy vs risk', *INFORMS Annual Meeting*, San Diego, USA, 11-14 October, 2009.

21. Coffman Jnr EG, **Matsypura D** and Timkovsky VG 2009 'Portfolio margining: strategy vs risk', *23rd European Conference on Operational Research*, Bonn, Germany, 8th July 2009.

22. Timkovsky VG and **Matsypura D** 2009 'Computational Complexity of Portfolio Margining', *SIAM Conference on Computational Science and Engineering (CSE09)*, Miami, United States, 6th March 2009.

23. **Matsypura D** and Timkovsky VG, 'Account margin minimization problem: combinatorial approach', *Yalta Conference on Discrete and Global Optimization*, Yalta, Ukraine, 31 July-2 August, 2008.

24. Coffman Jr. EG, **Matsypura D**, Oron D and Timkovsky VG, 'Half-Integer Preemptive Schedules on Two Processors', *International Symposium on New Challenges in Scheduling Theory*, Marseille-Luminy, France, May 12-15, 2008.

25. **Matsypura D**, Oron D and Timkovsky VG, 'Modelling Complex Options Spreads and Risk Free Options Combinations', *International Conference on Modeling and Managing Ultra High Frequency Data*, Perth, Australia, 12-14 February 2008.

26. Cruz J and **Matsypura D**, 'Supply chain networks with corporate social responsibility through integrated environmental decision-making', *5th International Conference on Supply Chain Management and Information Systems SCMIS2007*, Melbourne, Australia, 9-12 December, 2007.

27. Cruz J and **Matsypura D**, 'Multiple period modeling of computational grid networks with budget and capacity constrains', *22nd European Conference on Operational Research*, Prague, Czech Republic, July 8-11, 2007.

28. **Matsypura D**, Nagurney A and Liu Z, 'Modeling of electric power supply chain networks with fuel suppliers via variational inequalities', *30th Conference of the International Association for Energy Economics*, Wellington, New Zealand, February 18-21, 2007.

29. Cruz J and **Matsypura D**, 'Dynamics of international financial networks with variable weight multicriteria decision-making', *INFORMS 2006 Annual Meeting*, Pittsburgh, Pennsylvania, USA, November 5-8, 2006.

30. **Matsypura D** and Nagurney A, 'Global supply chain network dynamics with multicriteria decision-making under risk and uncertainty', *Seventeenth Annual Conference of POMS*, Boston, USA, April 28-May 1, 2006.

31. **Matsypura D** and Nagurney A, 'Dynamics of electric power supply chain networks under risk and uncertainty', *International Conference on Computational Management Science*, University of Florida, Gainesville, Florida, USA, March 31 - April 3, 2005.

32. **Matsypura D** and Nagurney A, 'A supply chain network perspective for electric power generation, supply, transmission, and consumption', *CORS/INFORMS International Meeting*, Banff, Alberta, Canada, May 16-19, 2004; and *The International Conference on Computing, Communication and Control Technologies, CCCT'04*, Austin, Texas, USA, August 14-17, 2004.

33. Cruz J, **Matsypura D** and Nagurney A, 'Dynamics of global supply chain supernetworks', *Third Meeting of STELLA*, Focus Group 1, Washington DC, USA, January 16, 2004

34. Cruz J, **Matsypura D** and Nagurney A, 'Dynamics of global supply chain supernetworks', *NECTAR Conference No 7*, Umeå, Sweden, June 13-15, 2003.

35. Cruz J, **Matsypura D** and Nagurney A, 'Dynamics of global supply chain supernetworks', *Eighth INFORMS Computing Society Conference*, Chandler, Arizona, USA, January 8-10, 2003.

Teaching and curriculum development

⋄ **Foundations of Business Analytics** (undergraduate core). This is a core course of the Business Analytics major. I designed this course. It covers linear algebra, least squares data fitting and basics of optimization. The course uses Python as the main computing tool. Enrolment ranges between 200 and 300 students.

  – 2018, 2019

⋄ **Optimization** (undergraduate honours core). This is an advanced undergraduate course which covers convex nonlinear optimization. I designed the course. Enrolment averages 10 students.

  – 2011-2018

⋄ **Operations Management** (undergraduate elective). This is an introductory Operations Management course. I designed the course. Enrolment ranges between 30 and 80 students.

– 2008, 2011-2013, 2016

◇ **Game Theory** (undergraduate elective). This is an advanced undergraduate course on game theory. I designed the course. Enrolment averaged 10 students.

– 2008, 2009

◇ **Management Science** (undergraduate core). This course covers linear and integer programming. Its main focus is mathematical modelling and applications. I have re-designed the course several times. In 2017 I have introduced Python as the main computing tool. Enrolment ranges between 100 and 200 students.

– 2011, 2012, 2016-2018

◇ **Business and Economic Statistics** (undergraduate core). This is an introductory statistics course for first-year undergraduate students. Enrolment ranges between 300 and 900 students. It is taught by several academics with a large number of teaching assistants. One of the academics is a designated coordinator. I have coordinated this course in all instances except the first one.

– 2007, 2009, 2010, 2014, 2015

◇ **Management Science Applications** (undergraduate elective). This is an advanced undergraduate course with focus on applications. Some of the topics it covers are inventory control models, queueing and network flow models. Enrolment was 18 students.

– 2005

Student supervision (Honours and Ph.D.)

1. Wai Yin (Jessica) Leung, PhD, in progress.

2. Zhan Heng, Bachelor of Commerce (Honours), in progress.

3. Jiarui Shao, Bachelor of Commerce (Honours), 2018.

4. Kaiming Yang, Bachelor of Commerce (Honours), 2018.

5. Siyu (Alisa) Yin, Bachelor of Commerce (Honours), 2018.

6. Yangqi Zhang, Bachelor of Commerce (Honours), 2017.

7. Ryan Walter Thompson, Bachelor of Commerce (Honours), 2016.

8. Emily Ee-Mei Neo, Bachelor of Commerce (Honours), 2015, completed with University Medal.

9. Muhammad Alif Aizat Zahar, Bachelor of Commerce (Honours), 2015.

10. Alex George, Bachelor of Commerce (Honours), 2013.

11. Richard Alessi, Bachelor of Commerce (Honours), 2013, completed with University Medal.

Professional development workshops

◇ Social Media Data Extraction and Analysis, 27 - 30 November 2017
(http://sydney.edu.au/business/research/meafa/workshops/socialmedia),
raised AU$70,000 to fund PhD scholarships.

◇ Machine Learning using Python, 19 - 23 February 2018
(http://sydney.edu.au/business/research/meafa/workshops/machinelearning),
raised AU$70,000 to fund PhD scholarships.

◇ Text Analytics using Python, 3 - 7 December 2018
(https://business.sydney.edu.au/research/meafa/workshops/text_analytics),
raised AU$70,000 to fund PhD scholarships.

Professional service

Editorial service

⋄ Associate Editor, *Omega: The International Journal of Management Science*, 2017-present.

Conference program committee memberships

⋄ The 14th International Symposium on Econometric Theory and Applications, Sydney, Australia, 31 May-1 June 2018.

⋄ Symposium on Systems Analysis in Forest Resources, Seattle, United States, 27-30 August 2017.

⋄ Yalta Optimization Conference, Yalta, Ukraine, August 2-4, 2012.

⋄ Yalta Optimization Conference, Yalta, Ukraine, August 2-4, 2010.

Languages

⋄ Ukrainian - native

⋄ English - fluent

⋄ Russian - fluent

Personal information

⋄ Marital status - married, one child

⋄ Citizenship - Australian