CV of Professor Alexei A. Gaivoronski

Education:

1977	M.Sc. from Moscow Institute of Physics and Technology in applied mathematics with specialization in operations research
1979	Ph.D. in operational research from V. Glushkov Institute of Cybernetics

Employment:

1997-now	Professor of Industrial Economics and Operations Research, Department of Industrial Economy and Technology Management, Norwegian University of Science and Technology
2008-2015	Visiting Professor, University of Cagliari, Italy
2008-2009	Visiting Research Fellow, Xerox Research Center Europe, Grenoble, France
2004	Visiting Professor, Universite Paris Sud, LRI, Orsay, France
1991-1997	Senior member of research staff, ITALTEL, Milan, Italy
1983-1988 2007-2009 2017	Research fellow, Visiting Research Fellow, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
1977-1983 1988-1991	Research fellow, senior research fellow, Head of laboratory, V. Glushkov Institute of Cybernetics, Kiev, ex. USSR

Languages: *Fluent*: Norwegian, English, Russian, Italian, Ukrainian; *Working knowledge (mostly reading)* – French.

Research interests:

- Information and telecommunication economics, service economics
- Financial optimization and risk management
- Optimization under uncertainty, stochastic programming, modelling and optimisation of stochastic systems with applications to industry and services
- Selected computer science modelling and optimization approaches: neural nets, agent systems, machine learning

I have published more than 70 research papers on these topics.

PhD supervision (NTNU)

- Supervision of 5 successful PhDs with topics in telecommunication/information economics, finance and optimization under uncertainty.

1. Petter Eilif de Lange, *Asset Liability Management in the Insurance Business Using Stochastic Programming*, NTNU, 1999.
2. Adrian Werner, *Decision support for strategic planning in telecommunications*, Norwegian University of Science and Technology (NTNU), 2004.

3. Josip Zoric, *Techno-Business Analysis of Service Platforms (A Framework for Quantitative Approach*), NTNU, 2011.
4. Denis Becker, *Stochastic models for telecommunication planning*, NTNU, 2011.
5. Paolo Pisciella, *Methods for evaluation of business models for provision of advanced mobile services under uncertainty*, NTNU, 2012.
Besides, I have supervised 4 successful PhDs during my work in Italy and ex. USSR.

Recent teaching:

- IKT economics and planning, course TIØ4135, TIØ4136, NTNU
- Empirical finance and Financial Optimization, course TIØ4317, NTNU

Recent projects:

- Telenor, 2 research projects in planning, optimization and risk management in telecom industry, each involving financing for 1 Ph.D. student, 2005-2010.
- EU 6th Framework Program, Integrated Project SPICE, Task 1.4, Evaluation business models for provision of advanced mobile data services, 2006-2008.
- COST 293 project GRAAL *Graphs and Algorithms in Telecommunication Networks*.
- Telenor, Internet economics and cloud computing economics, 2011-2015
- SIU EURASIA project CPEALA-2012/10052 of collaboration with V. Glushkov Institute of Cybernetics, Ukraine, 2012-2014 and two additional SIU projects 2015-2019

List of refereed research publications (2000-now)

Published in refereed international journals and books

(full list contains more than 70 papers and is available upon request)

1. Becker, Denis; Gaivoronski, Alexei A., Optimisation approach to target costing under uncertainty with application to ICT-service, *International Journal of Production Research*, 2017
2. Gaivoronski, Alexei A., Nesse, Per Jonny and Olai B. Erdal, Internet service provision and content services: paid peering and competition between internet providers, *NETNOMICS: Economic Research and Electronic Networking*, *18*(1), 43-79.
3. Gaivoronski, Alexei A.; Jacopo Napolitano and Giovanni M. Sechi, Stochastic gradient methods for the optimization of water supply systems, *European Water* 58: 415-421, 2017.
4. Gaivoronski, Alexei A., Nesse, Per Jonny; Østerbo, Olav-Norvald; Lønsethagen, Håkon, Risk-balanced dimensioning and pricing of End-to-End differentiated services. *European Journal of Operational Research*, 2016 ;Volume 254. p. 644-655
5. Gaivoronski, Alexei A.; Nesse, Per Jonny; Erdal, Olai-Bendik; Johansen, Finn-Tore, Internet service provision and content services: Peering and service differentiation. *Communications in Computer and Information Science*, 2016 ;Volume 567. p. 63-78
6. Nesse, Per Jonny; Gaivoronski, Alexei A.; Lønsethagen, Håkon, Ecosystem, QoE and pricing of end to end differentiated services. I: *Proceedings of 2015 6th International Conference on Information, Intelligence, Systems and*

Applications (IISA 2015). IEEE conference proceedings, 2016 ISBN 978-1-4673-9312-6. p. 40-46

7. A. A. Gaivoronski, Yu. M. Ermoliev, P. S. Knopov and V. I. Norkin, Mathematical Modeling of Distributed Catastrophic and Terrorist Risks, *Cybernetics and Systems Analysis*, 2015, Volume 51, Issue 1, pp 85-95
8. D. Becker and A.A. Gaivoronski, Stochastic Optimization on Social Networks with Application to Service Pricing, *Computational Management Science,* 2014
9. A. A. Gaivoronski, D. Strasunskas, P. J. Nesse, S. Svaet, and X. Su, Modeling and Economic Analysis of the Cloud Brokering Platform Under Uncertainty: Choosing a Risk/Profit Trade-off, Service Science, June 2013, v.5, pp.137-162.
10. J. Nesse, S.W. Svaet, D. Strasunskas and A.A. Gaivoronski, Assessment and optimisation of business opportunities for telecom operators in the cloud value network, *Transactions on Emerging Telecommunications Technologies*, Volume 24, Issue 5, August 2013, Pages: 503–516
11. P. J. Nesse, S. Svaet, X. Su, D. Strasunskas and A. A. Gaivoronski, Telecom industry in the cloud value chain – Methods for assessing business opportunities. In: *Proceedings of The 10th International Conference on Advances in Mobile Computing and Multimedia (MOMM 2012),* Association for Computing Machinery (ACM), 2012, ISBN 978-1-4503-1307-0. pp. 245-248
12. H. Jevne, P. Haddow and A. Gaivoronski. Evolving constrained mean-VaR efficient frontiers. In: *2012 IEEE Congress on Evolutionary Computation*. IEEE conference proceedings, 2012 ISBN 978-1-4673-1510-4.
13. A. A. Gaivoronski, G. Sechi and P. Zuddas, Cost/risk balanced management of scarce resources using stochastic programming, *European Journal of Operational Research,* v. 216(1), 2012, pp 214-224.
14. W. Benajam, A. A. Gaivoronski and A. Lisser, Stochastic frequency assignment problem, in: Stochastic Programming. Applications in Finance, Energy Planning and Logistics, H.I. Gassman and W. T. Ziemba, eds., World Scientific, 2012, pp.487-512, ISBN 978-981-4407-50-2.
15. C. Dance and A.A. Gaivoronski, Service capacity allocation under random service demand, Annals of Operations Research, Volume 193, Issue 1 (2012), Page 221-253.
16. A. A. Gaivoronski, G. Sechi and P. Zuddas, Balancing cost-risk in management optimization of water resource systems under uncertainty, *Journal of Physics and Chemistry of the Earth*, *Parts A/B/C*, Volumes 42–44, 2012, Pages 98-107.
17. A. Gaivoronski and A. Werner, Stochastic programming perspective on the agency problems under uncertainty, *Lecture Notes in Economics and Mathematical Systems*, Kurt Marti ed., Springer, 2011.
18. A. Gaivoronski, A. Lisser, R. Lopez and H. Xu, Knapsack problems with probability constraints, *Journal of Global Optimization*, v. 49, No. 3 (2011), pp 397-413.
19. A. A. Gaivoronski and D. Becker, Differentiated Service Pricing on Social Networks Using Stochastic Optimization, in: Proceedings of 2011 IEEE

International Conference on Services Computing, H.-A. Jacobsen, Y. Wang and P. Hung eds., 2011, IEEE Computer Society, pp.386-393, ISBN 978-0-7695-4462-5.

20. Yu. Ermoliev, A. A. Gaivoronski and M. Makowski, Robust design of networks under risks, Lecture Notes in Economics and Mathematical Systems, v. 633, 2010, pp.101-137, Springer.
21. A. A. Gaivoronski, J. Zoric and Paolo Pisciella, Business Model Evaluation for an Advanced Multimedia Service Portfolio, Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, v.12, pp. 23-32, Springer, 2009
22. Ballon, P., Gaivoronski, A., Walravens, N., Zoric, J.: Structural and Quantitative Evaluation of Multi-Actor Business Models for Mobile Service Platforms. In: Proceedings of ICT-Mobile Summit (2008), International Information Management Corporation, ISBN: 978-1-905824-08-3.
23. A. A. Gaivoronski and J. Zoric, Evaluation and design of business models for collaborative provision of advanced mobile data services: portfolio theory approach, in: Telecommunications Modeling, Policy, and Technology, Golden, Raghavan and Wasil, eds., Springer, 2008.