

## CURRICULUM VITAE

### 1. Name

Name: Collan, Mikael

Sex: Male

Date of this CV: 07.01.2021

### 2. Date and place of birth, nationality, current residence

Year of birth: 1975, Helsinki, Finland

Nationality: Finnish

Place of residence: Salo, Finland

### 3. Education and degrees awarded

Degree titles:

D. Sc. (Economics and Business Administration), Åbo Akademi University, major: Information Systems, graduation date: 17.12.2004  
[Supervisor: Professor Christer Carlsson]

M.Soc.Sc., Åbo Akademi University, Major: Economics, graduation date: 15.12.2000

Title of Docent:

Title of Docent at Åbo Akademi University, information systems especially investment and financial planning, 1.7.2008-30.6.2013 – 30.6.2017.

Title of Docent at Lappeenranta University of Technology, strategy research, especially real options in management decision-making, 1.2.2009 – 28.2.2017 (ended due to tenure)

### 4. Current position

#### Director General

VATT Institute for Economic Research

01.01.2021 -

#### Professor of strategic finance (full tenured professor)

*LUT-University*, Lappeenranta, Finland

01.01.2013 –

- Academic director of the Master's Program in Economics and Business Administration on "Strategic Finance and Business Analytics" (MSF), 2012 - 2020
- Academic director of the Master's Program in Industrial Engineering and Management on "Business Analytics" (MBAN), since the beginning of the programme – 10/2018
- Team leader – "Strategic Finance and Business Analytics" 1.6.2017 – 31.12.2020

- Director, Innovation and Software competence area (department) at LUT School of Business and Management 20.4.2016 – 31.8.2016 (when department was merged with another dept.)
- Acting director of the Department of Economics and Law 1.9.2013 – 28.2.2014
- Vice-director of the Department of Economics and Law, 1.1.2013 – 31.8.2014

Additional current positions:

**Member of the board of directors**

*Fennicum Financial Consulting Ltd. (Investments)*

December, 2000 –

*Avaintec Oy (Analytics, eSignatures) – <http://www.avaintec.com>*

September, 2017 –

*SilentQuote Oy (Startup-investment, property investment)*

December 2006 –

*Asuntosäästö Asua Oy (Property investment)*

June 2019 -

+ experience as MOB in a number of small start-up and SME firms and building societies (asunto-osakeyhtiö)

**5. Previous work experience (selected)**

**Member of the board of directors**

*Vaadin Inc. (<http://www.vaadin.com>)*

June, 2006 – January, 2016 (after a \$6M mezzanine financing round)

**Visiting Professor**

*University of Trento, Italy - Department of Industrial Engineering*

September – October, 2014

**Professor, Accounting**

*Lappeenranta University of Technology (LUT), Lappeenranta, Finland*

01.11.2011 – 31.12.2012

**University lecturer, Information Systems**

*University of Turku, Pori, Finland*

1.11.2010 – 31.10.2011

## 6. Research funding as well as leadership and supervision (latest)

Finnish Strategic Research Council (2018 – 2020 / 2023)

Manufacturing 4.0 (MFG40) – SRC consortium grant – <http://www.mfg40.fi>

WP3 PI Mikael Collan (~850K€, total of project 6,4M€)

Academy of Finland (2017 – 2019)

MOBISPBSULUT project for supporting collaboration with the St. Petersburg State University

PI Mikael Collan (~50K€)

Member of the steering group, Digital Wells project (young elderly, digital pre-emption and rehabilitation 2019-2021)

IAMSR, KELA, Sitra, UKK-Instituutti, Peurunka (budget not disclosed)

## 7. Merits in teaching and pedagogical competence (selected)

Curriculum planning:

- Lappeenranta University of Technology: Academic director of the Master's Program on Strategic Finance (MSF) 1.1.2013 – 31.12.2020
- Lappeenranta University of Technology: Academic director of the Master's Program in Business Analytics – fully planning responsibility for the program and executing the start, now *co-director*. Actually two programmes, one in engineering and one in business admin.
- University of Turku, Pori Unit: Information systems degree program lead, Member of the panel for developing teaching at the Unit
- Turku University of Applied Sciences: as principal lecturer responsible for the teaching programme of the department

Ph.D. Student supervision:

- Presently supervisor of ten doctoral students at Lappeenranta University of Technology
- Supervisor of five finished doctoral students (Kozlova, Stoklasa, Savolainen, Spodniak, Talasek)
- Acted as opponent for two doctoral candidates (Finland, Norway)

Supervision of M.Sc. and B.Sc. theses:

- Currently supervising ~10 M.Sc. theses
- In 2014-20 supervised ~85 M.Sc. theses (finished), and ~45 as the second supervisor
- Multiple (in the tens) ready B.Sc. and M.Sc. thesis supervisions at four universities

Teaching awards:

- *Lecturer of the year 2020* – Selected by the LUT University student association
- *Teacher of the Year 2011* – Selected by the student association “Porin Kylterit ry” at the University of Turku School of Business, Pori Unit

- *Teacher of the Year 2009* - Selected by the association of the economics and business administration students “Merkantila Klubben rf.” At the Åbo Akademi University.

### **8. Other academic merits (selected)**

- Ordinary (life) member of the Finnish Society of Sciences and Letters (Suomen Tiedeseura) since 2015 – one of the four Finnish academies of science, deputy member of the board (2019- )
- Chairman of the board of the Finnish Real Option Society 2010 -
- Member of the board, North European Society for Adaptive and Intelligent Systems 2010 –
- Member of EUSFLAT (European Society for Fuzzy Logic and Technology)
- Member of the Finnish Operations Research Society (FORS) – *Past President* (2015-2017)

### **9. Positions of trust in society and other societal merits (selected)**

- Member of the Board of the Philatelic Federation of Finland 2016 - 2017
- Member of the Council of the Faculty of Economics and Political Sciences of the Åbo Akademi University 2003-2005
- Deputy Member of the Board of Åbo Akademi University 2003-2005
- Deputy Member of the Council of the Department of Information Systems, Åbo Akademi University 10/2003 – 2005
- Deputy member / member of the Åbo Akademi University Collegium 2010 – 2012

### **10. Scientific and societal impact of research work**

- 60+ journal articles
- ~20 book chapters, 10+ monographs, 70+ peer-reviewed conference articles
- ~200 publications in total
- Web sites <http://www.payoffmethod.com> and <http://www.lazyusermodel.org>
- Research group site <http://www.softcomputing.fi>
- Project site <http://www.mfg40.fi>

## LIST OF PUBLICATIONS

### 1. JOURNAL PUBLICATIONS WITH REFEREE PRACTICE

1. Collan, M., 2009, Strategic Real Options in Area Development Projects: Reflections on the Finnish Background, *Finnish Journal of Business*, 3-4/2009, 151-180 (JUFO 1)
2. Collan, M., 2010, Valuation of Area Development Project Investments as Compound Real Option Problems, *Journal of Applied Operational Research*, 2, 1, 71-78 (JUFO 1)
3. Collan, M., 2011, Valuation of Industrial Giga-Investments: Theory and Practice, *Fuzzy Economic Review*, 16, 1, 21-37 (Scopus indexed) (JUFO 0)
4. Collan, M., 2011, Thoughts about selected models for the valuation of real options, *Acta Universitatis Palackianae Olomucensis Mathematica*, 50, 1, 5-12 (JUFO 1)
5. Collan, M., 2013, Fuzzy or linguistic input scorecard for IPR evaluation, *Journal of Applied Operational Research*, 5, 1, 22-29 (JUFO 1)
6. Collan, M., Björk, K-M., and Kyläheiko, K., 2014, Evaluation of an Information Systems investment into Reducing the Bullwhip Effect – a Three Step Process, *International Journal of Logistics Systems and Management*, 17, 3, 340-356 (JUFO 1)
7. Collan, M., Carlsson, C., and Majlender, P., 2003, Fuzzy Black and Scholes Real Option Pricing, *Journal of Decision Systems*, 12, 3-4, 391-416 (JUFO 1)
8. Collan, M., Eklund, T., and Back, B., 2007, Using the Self-Organizing Map to Visualize and Explore Socio-Economic Development, *EBS Review*, 22, 1, 6-15 (JUFO 0)
9. Collan, M., Fedrizzi, M., and Luukka, P., 2013, A Multi-Expert System for Ranking Patents: An Approach Based on Fuzzy Pay-Off Distributions and a TOPSIS-AHP Framework, *Expert Systems with Applications*, 40, 12, 4749-4759, IF 2015: 2,981 (JUFO 1)
10. Collan, M., Fedrizzi, M., and Luukka, P., 2017, Possibilistic risk aversion in group decisions: Theory with application in the insurance of giga-investments valued through the fuzzy pay-off method, *Soft Computing*, 21, 15, 4375-4386 (JUFO 1)
11. Collan, M. and Luukka, P., 2015, New Fuzzy Insurance Pricing Method for Giga-Investment Project Insurance, *Insurance Mathematics and Economics*, 65, 1, 22-29 IF 2015: 1,378 (JUFO 1)
12. Collan, M., and Luukka, P., 2018, Multiple criteria multiple peer-assessment for an eLearning environment using a linguistic scorecard for on-line peer-assessment, 23, 1, 3-18, *Fuzzy Economic Review* (JUFO 1)
13. Collan, M., Luukka, P., and Fedrizzi, M., 2015, New closeness coefficients for fuzzy similarity based fuzzy TOPSIS: An approach combining fuzzy entropy and multi-distance, *Advances in fuzzy systems*, 2015 doi:10.1155/2015/251646 (JUFO 1)

14. Collan, M., Fullér, R., and Mezei, J., 2009, A Fuzzy Pay-Off Method for Real Option Valuation, *Journal of Applied Mathematics and Decision Sciences*, vol. 2009, Article ID 238196, 14 pages, 2009. doi:10.1155/2009/238196 (JUFO 1)
15. Collan, M., Fullér, R., and Mezei, J., 2012, Credibilistic approach to the fuzzy pay-off method for real option analysis, *Journal of Applied Operational Research*, 4, 4, 174-182 (JUFO 1)
16. Collan, M., Haahtela, T., and Kyläheiko, K., 2016, On the usability of real option valuation model types under different types of uncertainty, *International Journal of Business Innovation and Research*, 11, 1, 18-37 (JUFO 1)
17. Collan, M. and Heikkilä, M., 2011, Enhancing Patent Valuation with the Pay-Off Method, *Journal of Intellectual Property Rights*, 16, 5, 377-384 (JUFO 1)
18. Collan, M. and Kinnunen, J., 2009, Acquisition Strategy and Real Options, *Icfai University Journal of Business Strategy*, 6, 3-4, 45-65 (JUFO 1)
19. Collan, M. and Kinnunen, J., 2011, A Procedure for the Rapid Pre-acquisition Screening of Target Companies Using the Pay-off Method for Real Option Valuation, *Journal of Real Options and Strategy*, 4, 1, 115-139 (JUFO 0)
20. Collan, M. and Kyläheiko, K., 2013, Forward-looking Valuation of Strategic Patent Portfolios Under Structural Uncertainty, *Journal of Intellectual Property Rights*, 18, 3, 230-241 (JUFO 1)
21. Collan, M., Kyläheiko, K., Freiling, J., and Roemer, E., 2014, Entrepreneurship and the art of tackling technological crises: a strategic real options framework, *International Journal of Technology Intelligence and Planning*, 10, 2, 166-185 (JUFO 1)
22. Collan, M. and Liu, S., 2003, Fuzzy Logic and Intelligent Agents: Towards the Next Step of Capital Budgeting, *Industrial Management and Data Systems*, 103, 6, 410-422 IF 2015: 1,278 (JUFO 1)
23. Collan, M. and Luukka, P., 2014, Evaluating R&D projects as investments by using an overall ranking from four new similarity measure based TOPSIS variants, *IEEE Transactions on Fuzzy Systems*, 21, 6, 1-11 IF 2015: 6,701 (JUFO 3)
24. Collan, M., and Luukka, P., 2018, Multiple criteria multiple peer-assessment for an eLearning environment using a linguistic scorecard for on-line peer-assessment, *Fuzzy Economic Review*, 23, 1, 3-18 (JUFO 1)
25. Collan M., Savolainen, J., and Luukka, P., 2017, Investigating the effect of price process selection on the value of a metal mining asset portfolio, *Mineral Economics*, 30, 2, 107-115 (JUFO 1)
26. Collan, M. and Savolainen, J., 2020, To Phase or Not to Phase: Quantifying the Effect of Phasing Construction Projects, *Nordic Journal of Business*, 69, 1, 68-90 (JUFO 1)
27. Collan, M., Stoklasa, J., and Talasova, J., 2014, On academic faculty evaluation systems – more than just simple benchmarking, *International Journal of Process Management and Benchmarking*, 4, 4, 437-455 (JUFO 1)

28. Han, S., Harkke, V., Tetard, F., and Collan, M., 2007, The Performance of a Mobile Medical Information System: Assessment by Physicians Undertaking Compulsory Military Service, *The Journal on Information Technology in Healthcare*, 5, 3, 171-181 (JUFO 1)
29. Hassanzadeh, F., Collan, M., and Modarres, M., 2011, A Technical Note on "fuzzy set approach for R&D portfolio selection using a real options valuation model" by Wang and Hwang (2007), *Omega*, 39, 464-465 IF 2015: 2,962 (JUFO 2)
30. Hassanzadeh, F. Collan, M., and Modarres, M., 2012, A Practical Approach to R&D Portfolio Selection Using Fuzzy Set Theory, *IEEE Transactions on Fuzzy Systems*, 20, 2, 615-622 IF 2015: 6,701 (JUFO 3)
31. Hietanen, L., Kozlova, M., and Collan, M., 2020 forthcoming, Analyzing renewable energy policies – using the pay-off method to study the Finnish auction-based renewable energy policy, *Journal of Environmental Informatics Letters* (JUFO 1)
32. Koloseni, D., Fedrizzi M., Luukka, M., Collan, M., and Lampinen, J., 2016, Feature-wise Differential Evolution Classifier with an OWA-Based Multi-Distance Aggregation, *International Journal of Mathematics in Operational Research*, 9, 4, 436-451 (JUFO 0)
33. Kozlova, M. and Collan, M., 2016, Modeling the effects of the new Russian capacity mechanism on renewable energy investments, *Energy Policy*, 95, 1, 350-360 (JUFO 1), IF 3,045 (Elsevier)
34. Kozlova, M. and Collan, M., 2020, Renewable energy investment attractiveness: enabling multi-criteria cross-regional analysis from the investors' perspective, *Renewable Energy*, 150, 1, 382-400 IF 5.439, (JUFO 2)
35. Kozlova, M., Collan, M., and Luukka, P., 2016, Comparison of the Datar-Mathews method and the Fuzzy Pay-Off method through numerical results, *Advances in decision sciences*, 2016 (JUFO 1)
36. Kozlova, M., Collan, M., and Luukka, P., 2017, Simulation decomposition: New approach for better simulation analysis of multi-variable investment projects, *Fuzzy Economic Review*, 21, 2, 3-18 (JUFO 1)
37. Kozlova, M., Luukka, P., and Collan, M., 2018, New investment decision-making tool that combines a fuzzy inference system with real option analysis, *Fuzzy Economic Review*, 23, 1, 63-92 (JUFO 1)
38. Kurama, O., Luukka, P., and Collan, M., 2016, New n-ary  $\lambda$ -similarity classifier, *International Journal of Applied Mathematics and Computer Science* (JUFO 1), IF 1,037 (AMCS), 26, 2, 407-421
39. Kurama, O., Luukka, P., and Collan, M., 2016, A similarity classifier with Bonferroni mean operators", *Advances in Fuzzy Systems*, 2016, 11 pages, <http://dx.doi.org/10.1155/2016/7173054>, (JUFO 1)

40. Kurama, O., Luukka, P., and Collan, M., 2017, Similarity classifier with weighted ordered weighted averaging operator, *Fuzzy Economic Review*, 21, 2, 93-109 (JUFO 1)
41. Lawryshyn, Y., Collan, M., Luukka, P., and Fedrizzi, M., 2017, New procedure for valuing patents under imprecise information with a consensual dynamics model and real options framework, *Expert Systems with Applications*, 86, 155-164 (JUFO 1) IF 3,928
42. Luukka, P. and Collan, M., 2016, Histogram ranking with generalized similarity based TOPSIS applied to patent ranking, *International Journal of Operational Research*, 25, 4, 437-448 (JUFO 1)
43. Luukka, P. and Collan, M., 2017, Comparing circular histograms by using Modulo similarity and Maximum Pair-Assignment Compatibility measure, *International Journal of Computational Intelligence Systems*, 10, 1, 1-12 (JUFO 1) IF 1,14
44. Luukka, P., Efimov-Soini, N., Collan, M., and Kozlova, M., 2017, Fuzzy MCDM-procedure for design evaluation: capturing redundant information with an interaction matrix, *Journal of Multi-Valued Logic*, 29 ,5, 469-484 (JUFO 1)
45. Luukka, P., Stoklasa, J., and Collan, M., 2018, Transformations between the center of gravity and the possibilistic mean for triangular and trapezoidal fuzzy numbers, *Soft Computing*, 23, 10, 3229-3236, <https://doi.org/10.1007/s00500-018-3204-z> , IF 2,472
46. Morreale, A., Stoklasa, J., Collan, M., and Lo Nigro, G., 2016, Uncertain outcome presentations bias decisions: experimental evidence from Finland and Italy, *Annals of Operations Research*, 2016 (JUFO 1) IF 1,406
47. Morreale, A., Vu, T., Mittone, L., and Collan, M., 2020, To wait or not to wait? Use of the flexibility to postpone investment decisions in theory and in practice, *Sustainability*, 12, 8, 3451, <https://doi.org/10.3390/su12083451> IF 2.592 (JUFO 1)
48. Sandström, J., Kyläheiko, K., and Collan, M., 2016, Managing uncertainty in long life cycle investments: Unifying investment planning, management, and post-audit with a fuzzy DSS, *International Journal of Business Innovation and Research*, 11,1, 133-145 (JUFO 1)
49. Savolainen, J. and Collan, M., 2020, Additive manufacturing technology and business model change – a review of literature, *Additive Manufacturing*, vol. 32, <https://doi.org/10.1016/j.addma.2020.101070> IF 7.173, (JUFO 2)
50. Savolainen, J. and Collan, M., 2020, *Using meta-models in simulation-based investment analysis – studying the financing mix of metal mining investments*, *Fuzzy Economic Review*, in press, (JUFO 1)
51. Savolainen, J., Collan, M., Kyläheiko, K., and Luukka, P., 2017 in press, On the trade-off between the leverage effect and real options thinking: A simulation based model on metal mining investment, *International Journal of Production Economics*, 194, 1, 43-51, IF 2,782, (JUFO 1)
52. Savolainen, J., Collan, M., and Luukka, P., 2016, Combining system dynamic modeling and the Datar-Mathews – method for analyzing metal mine investments, *Acta Universitatis Palackinae Olomucensis, Facultas Rerum Naturalium, Mathematica*, 55, 1, 95-109 (JUFO 1)



53. Savolainen, J., Collan, M., and Luukka, P., 2016, Analyzing operational real options in metal mining investments with a system dynamic model, *The Engineering Economist*, 72, 1, 54-72 (JUFO 1), IF 1,207 (2016)
54. Savolainen, J., Collan, M., and Luukka, P., 2017, Using a cycle reverting price process in modeling metal mining project profitability, *Kybernetes*, 46, 1, 131-141 (JUFO 1), IF 0,637
55. Savolainen, J., Pedretti, D., and Collan, M., 2019, Incorporating hydrological uncertainties in industrial economic models: implications of extreme rainfall variability on metal mining investments, *Mine Water and the Environment*, <https://doi.org/10.1007/s10230-019-00600-w> (JUFO 1), IF 1,521 (2018)
56. Savolainen, J. and Collan, M., 2020, Additive manufacturing technology and business model change – a review of literature, *Additive Manufacturing*, vol. 32, <https://doi.org/10.1016/j.addma.2020.101070> IF 7.173, (JUFO 2)
57. Spodniak, P. and Collan, M., 2018, Forward risk premia in long-term transmission rights: the case of electricity price area differentials (EPAD) in the Nordic electricity market, *Utilities Policy*, 50, 1, 194-206 (JUFO 1), IF 1,682
58. Spodniak, P., Collan, M., and Makkonen, M., 2017, On long-term transmission rights in the Nordic electricity markets, *Energies*, 10, 295, 19 pages, doi:10.3390/en10030295 (JUFO 1)
59. Stoklasa, J., Luukka, P., and Collan, M., 2020, Possibilistic Fuzzy Pay-off Method for Real Option Valuation with Application to Research and Development Investment Analysis, *Fuzzy Sets and Systems*, in press, IF 2.907, (JUFO 1)
60. Stoklasa, J., Morreale, A., Talasek, T., and Collan, M., 2020, The mean & range effect – a sweet spot stimulating risk-seeking in managerial decision support, *Nordic Journal of Business*, 69,1, forthcoming (JUFO 1)
61. Turel, O., Serenko, A., Detlor, B., Collan, M., Nam, I., and Puhakainen, J., 2006, Investigating the determinants of satisfaction and usage of Mobile IT services in four countries, *Journal of Global Information Technology Management*, 9, 4, 6-27 (JUFO 1)
62. Urbani, M., Brunelli, M., and Collan, M., 2020, A comparison of maintenance policies for multi-component systems through discrete event simulation of faults, *IEEE Access*, 8, 1, 2169-3536 (JUFO 2) IF 4,098
63. Wallenius, L., Fedorova, E., Collan, M., and Ahmed, S., 2016, Surprise Effect of Euro Area Macroeconomic Announcements on CIVETS Stock Markets, *Prague Economic Papers*, published online (JUFO 1)

## **2. PUBLICATIONS IN EDITED VOLUMES WITH A REFEREE PRACTICE**

1. Alas, R., Eklund, T., Collan, M., and Kraus, A., 2009, International Patterns in Manufacturing Strategies, in Ordonez de Pablos, C. and Lytras, M. (Eds.), 2009, *The China Information Technology Handbook*, Springer (JUFO 1)

2. Chechurin, L. and Collan, M., Preface, in Chechurin, L. and Collan, M. (Eds.), 2019, *Advances in systematic creativity – creating and managing innovations*, v-x, Palgrave MacMillan, Heidelberg, Germany (JUFO 3)
3. Collan, M. And Kacprzyk, J., 2017, 2017, Preface, in Collan, M. and Kacprzyk, J., (Eds.), 2017, *Soft computing applications for group decision-making and consensus*, *Studies in Fuzziness and Soft Computing*, 357, xiii-xxii, Springer, Heidelberg (JUFO 2)
4. Collan, M. and Luukka, P., 2016, Strategic R&D project analysis: keeping it simple and smart, in Collan, M., Fedrizzi, M., and Kacprzyk, J. (Eds.), *Solving problems with fuzzy technology*, in the series *Studies in Fuzziness and Soft Computing*, 335, 169-192, Springer International Publishing, Cham, Swizerland (JUFO 2)
5. Collan, M. and Luukka, P., 2019, Using Innovation Scorecards and Lossless Fuzzy Weighted Averaging in Multiple-criteria Multi-expert Innovation Evaluation, in Chechurin, L. and Collan, M. (Eds.), 2019, *Advances in systematic creativity – creating and managing innovations*, 323-340, Palgrave MacMillan, Heidelberg, Germany (JUFO 3)
6. Collan, M., Luukka, P., and Fedrizzi, M., 2016, Multi-distance and fuzzy similarity based fuzzy TOPSIS, in Madani, K., Correia, A., Rosa, A., Filipe, J., and Kacprzyk, J. (Eds.), *Computational intelligence*, Revised and selected papers of the international joint conference IJCCI 2013, *Studies in Computational Intelligence*, 613, 227-244, Springer (JUFO 2)
7. Collan, M. and Michelsen, K-E, 2020, Closing words – Quo Vadis Manufacturing 4.0, in Collan, M. and Michelsen, K-E. (Eds.), *Technical, Economic, and Societal Effects of Manufacturing 4.0 - Automation, Adaption, and Manufacturing in Finland and Beyond*, Palgrave MacMillan, London, UK, 259-261 (JUFO 3)
- 8a. Collan, M., Sell, A., Anckar, B., and Harkke, V., 2006, Using e- and m-Business Components in Business: Approaches, Cases and Rules of Thumb, in Zhao, F. (Ed.), *Entrepreneurship and Innovations in E-Business: An Integrative Perspective*, Idea Publishing, Hershey, PA (JUFO 1)
- 8b. Collan, M., Sell, A., Harkke, V., & Anckar, B. 2009. Using E- and M-Busines Components in Business: Approaches, Cases, and Rules of Thumb. In Lee I. (Ed.), *Electronic Business: Concepts, Methodologies, Tools, and Applications*, Vol. 1: 550-564. Hershey, PA: IGI Publishing. Reprint of 5a. (JUFO 1)
9. Collan, M., Stoklasa, J., and Talasova, J., 2015, Understanding Academic Faculty Evaluation Systems in Light of University Autonomy, in Turcan, R., Reilly, J., and Bugaian, L. (Eds.), *Re-Discovering University Autonomy*, Palgrave MacMillan, 97-106 (JUFO 3)
10. Collan, M. and Tetard, F., 2011, Lazy User Model: Solution Selection and Discussion about Switching Costs, in Salmela, H. and Sell, A. (Eds.), 2011, *Nordic Contributions in IS Research*, *Lecture Notes on Business Information Processing*, 86, pp.56-68, Springer, Heidelberg (JUFO 1)
11. Harkke, V. and Collan, M., 2005, Structures Surrounding e-Health: Effects of Legal and Administrative Structures on Development of IT in Health Care Services - Focus on Finland, D. Bangert and R. Doktor (Eds.), *Managing People in Telemedicine and e-Health: A Global Perspective*. Oxford, England: Radcliffe Medical Press. (JUFO 1)

12. Kinnunen J., Georgescu, I., and Collan, M., 2020, Center of gravity real options method based on interval-valued fuzzy numbers, in Kahraman, C., Onar, S., Oztaysi, B., Sari, I., Cebi, S., Tolga, A. (Eds.), *Intelligent and Fuzzy Techniques: Smart and Innovative Solutions - Proceedings of the International Conference on Intelligent and Fuzzy Systems (INFUS2020)*, Istanbul, Turkey, 21-23. July, 2020., 1292-1300, *Advances in Intelligent Systems and Computing*, 1197, Springer (JUFO 2) ISBN 978-3-030-51155-5
13. Kozlova, M., Collan, M., and Luukka, P., 2017, Russian Mechanism to Support Renewable Energy Investments: Before and After Analysis, in Diez, P., Neittaanmäki, P., Periaux, J., Tuovinen, T., and Bräysy, O. (Eds.), *Computational Methods for Transport – New Challenges for the Greening of Transport Systems*, 45, Springer, Cham, Switzerland, 243-252, ISBN 978-3-319-54489-2, (JUFO 2)
14. Kozlova, M., Collan, M., and Overland, I., 2020, Russian Renewable Energy: Regulations and Outcomes, in Hunter, T., Herrera, I., Crossley, P., and Alvarez, G. (Eds.) *Routledge Handbook of Energy Law*, Routledge, New York, USA, Chapter 12, 1-17 (JUFO 3)
15. Collan, M. and Luukka, P., 2019, Using Innovation Scorecards and Lossless Fuzzy Weighted Averaging in Multiple-criteria Multi-expert Innovation Evaluation, in Chechurin, L. and Collan, M. (Eds.), 2019, *Advances in systematic creativity – creating and managing innovations*, 323-340, Palgrave MacMillan, Heidelberg, Germany (JUFO 3)
16. Kurama, O., Luukka, P., and Collan, M., 2015, Credit Analysis Using a Combination of Fuzzy Robust PCA and a Classification Algorithm, in Gil-Aluja, J., Terceño-Gomez, A., Ferrer-Comalat, J.C., Merigó-Lindahl, J.M., and Linares-Mustarós S. (Eds.) *Scientific Methods for the Treatment of Uncertainty in Social Sciences*, *Advances in Intelligent Systems and Computing*, 377, 19-20, Springer (JUFO 1)
17. Liu, S., Eklund, T., Collan, M., and Sarlin, P., 2010, A Visualization and Clustering Approach to Analyzing the Early Warning Signals of Currency Crises. In Wang, J. and Wang, S. (Eds.), *Business Intelligence in Economic Forecasting – Technologies and Techniques*, 65-81, Hershey, PA, IGI Global (JUFO 1)
18. Luukka, P., Collan, M., and Fedrizzi, M., 2015, Consensus modeling under fuzziness – a dynamic approach with random iterative steps, in Pedrycz, W. and Chen, S-M (Eds.), *Granular Computing and Decision-Making*, *Studies in Big Data*, 10, 195-218, Springer, Switzerland (JUFO 2)
19. Luukka, P., Collan, M., Tam, F., and Lawryshyn, Y., 2017, Estimating One-Off Operational Risk Event with the Lossless Fuzzy Weighted Average Method, in Collan, M. and Kacprzyk, J. (Eds.), 2017, *Soft Computing Applications for Group Decision-making and Consensus Modeling*, *Studies in Fuzziness and Soft Computing*, 357, Springer International Publishing, Cham, Switzerland, ISBN 978-3-319-60206-6, 227-236 (JUFO 2)
20. Luukka, P., Stoklasa, J., and Collan, M., 2017, Transformation of variance to possibilistic variance and vice versa, in Kacprzyk, J. et Al. (Eds.) *Advances in Fuzzy Logic and Technology 2017 – proceedings of EUSFLAT 2017*, *Advances in Intelligent Systems and Computing*, 642, Springer, Cham, Switzerland, 456-467 (JUFO 2)

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#### **4. MONOGRAPHS AND EDITED BOOKS**

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