Curriculum Vitae of Assoc. Prof. Ľuboš Buzna, PhD.

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Nationality
Slovak

Born on May 30, 1977 in
Handlová

A. Career

01/2011 - present	University of Žilina, Faculty of Management Science and Informatics, Department of Mathematical Methods and Operations Research, Associate Professor of Applied Informatics
06/2014 – 01/2015	University of Barcelona, Faculty of Physics, Department of Fundamental Physics, Spain, postdoctoral researcher
10/2007 –07/2009	ETH Zurich, Department of Humanities, Social and Political Sciences, Chair of Sociology in particular of Modelling and Simulation, Switzerland, postdoctoral researcher
02/2005 – 09/2007	Dresden University of Technology, Faculty of Transportation and Traffic Sciences "Friedrich List", Chair of Traffic Modelling and Econometrics, Germany, postdoctoral researcher
09/2003 – 01/2011	University of Žilina, Faculty of Management Science and Informatics, Department of Transportation Networks, Assistant Professor

B. Education

2000 - 2003	University of Žilina, Faculty of Management Science and Informatics, PhD in the doctoral study program "Transportation and Communication Technology"
1995 - 2000	University of Žilina, Faculty of Management Science and Informatics, MSc in the study program "Information and Control Systems"
1991 - 1995	The secondary Technical School in Handlová, Electrotechnics

C. Research activities

C.1 Research interests
optimization algorithms, decisions support tools, complex systems, complex networks, design of public and private service systems, modelling and simulation of pedestrian flows, reliability models of information based critical infrastructures, fair sharing of scarce resources, pricing mechanisms in charging of electric vehicles

C.2 Selected research projects

06/2014-01/2015	FP 7 project LASAGNE (University of Barcelona), investigator
01/2013 – 12/2015	VEGA project, „Advanced microscopic modelling and complex data sources for designing spatially large public service systems", principal investigator
07/2012 – 12/2015	APVV project „Design of fair service systems on transportation networks", investigator
01/2012-12/2014	VEGA project „Public service systems with fair access to services", deputy principal investigator
09/2006 – 07/2009	FP 6 project IRRIIS „Integrated Risk Reduction of Information-based Infrastructure Systems" (TU Dresden, ETH Zurich), work package leader

C.3 Selected publications

1. Helbing D., Buzna Ľ., Johansson A., Werner T., Self-organized pedestrian crowd dynamics: experiments, simulations, and design solutions (2005) : In: Transportation Science - Vol. 39, No 1, Febr. (2005), pp. 1-24.

2. Janáček, J., Buzna, Ľ.: An acceleration of Erlenkotter-Körkel´s algorithms for the uncapacitated facility location problem. In: Annals of Operations Research, Volume 164, s. 97-109, November 2008, Springer Science+Business Media. LLC 2008 - ISSN 0254-5330.

3. Bloomfield, R., Buzna, Ľ., Popov, P., Salako K., and Wright, D., (2010), Stochastic Modelling of the Effects of Interdependencies between Critical Infrastructure , Lecture Notes in Computer Science, Springer Verlag, Vol. 6027/2010. p. 201-212.

4. R. Carvalho, L. Buzna, F. Bono, M. Masera, D. K. Arrowsmith, D.Helbing, Resilience of Natural Gas Networks during Conflicts, Crises and Disruptions , PLoS ONE 9(3): e90265, 2014

Reviewed in :
   MIT Technology Review (December 2013),
   Phys.org (March 2014),
   ETHZ News (March 2014) ,
   Energy Post (January2014),
   Journal of Energy Security (April 2014),
   De Ingenieur (May 2014),
   Gazeta.ru (March 2014),
   Quark (July 2014),
   Slovak Radio (July 2014)

5. Ľ. Buzna, M. Koháni, J. Janáček, An Approximation Algorithm for the Facility Location Problem with Lexicographic Minimax Objective, Journal of Applied Mathematics, Volume 2014 (2014), Article ID 562373, 12 pages

6. R. Carvalho, Ľ. Buzna, W. Just, D. Helbing, and D. K. Arrowsmith (2012) Fair sharing of resources in a supply network with constraints , Physical Review E, vol. 85, 046101.

7. J. Janáček, L. Jánošíková, Ľ. Buzna (2012) Optimized Design of Large-Scale Social Welfare Supporting Systems on Complex Networks , In: Thai, My T., Pardalos, Panos M. (Eds.), Handbook of Optimization in Complex Networks, Springer Series on Optimization and Its Applications , Vol. 57, ISBN 978-1-4614-0753-9.

8. R. Carvalho, Ľ. Buzna, F. Bono, E. Gutierrez, W. Just, and D. Arrowsmith (2009) Robustness of trans-European gas networks , Physical Review E, vol. 80, 5, 0161069.

Complete list of publication can be found on my homepage: http://frdsa.uniza.sk/~buzna

C.4 Citations
Number of citations in Web of Science: 449
Number of citations in Google Scholar: 1060

C.5 International collaborations
University of Durham, School of Engineering and Computing Sciences (Dr. Rui Carvalho)
ETH Zurich, Computational Social Science Professorship (Prof. Dirk Helbing)
University of Barcelona, Faculty of Physics (Prof. Albert Diaz Guilera, Prof. Marian Boguna, Prof. Mariangeles Serrano)
Joint Research Centre , Institute for Energy and Transport, (Marcelo Massera, Flavio Bono)
Queen Mary University of London, School of Mathematical Sciences (Prof. David Arrowsmith)

C.6 Reviews for journals indexed in the Current Contents Database
Transportation Science Part B [Elsevier] (1),
Annals of American Geographers [Association of American Geographers] (1),
International Journal of Production Research [Taylor & Francis] (1)
European Journal of Operation Research [Elsevier] (1),
Advances in Complex Systems [World Scientific] (1),
Building Simulation [Elsevier] (1)
Transactions on Modelling and Computer Simulation [ACM] (1)
Physica A[Elsevier] (4),
Europhysics Letters [European Physical Society] (2),
Physical Review E [American Physical Society] (5),
International Journal of Modern Physics C [World Scientific] (1),

C.7 Applied Research Projects

2003	Optimization of marshalling yard network, Slovak Railways, investigator
2004	Optimization of intelligent information panels locations in the urban areas for the parking system , Scheidt and Bachmann, investigator
2011	Optimization of the post delivery, Slovak Post, investigator

D. Teaching experience

D.1 Current courses
- Discrete Optimization, lectures and exercises, undergraduate module
- Modelling and Optimization, exercises, undergraduate module
- Optimization on Networks, exercises, postgraduate module
- supervision of students' projects: subjects Project 1, Project 2, Project 3

D. 2 Past courses
- Operations analysis 1, exercises, undergraduate module
- Communication systems, undergraduate module

D.3 Supervision of courses
- Programming of Optimization Algorithms
- Geographical and Information Systems
- Metaheuristics

D.4 Supervision of PhD students
Ing. Matej Cebecauer (expected submission of PhD thesis in April 2015)

D.5 Supervisions of Bachelor- and Master theses

Bachelor theses: 11
Master theses: 9

E. Awards
National award for exceptional citation response to scientific publications from the Slovak
Literature Foundation in the category of technical sciences and geosciences (III. place) in 2013

F. Computer skills

Operation Systems: Linux, Windows, Mac OS, Android
Programming languages: Java, Delphi, Visual Basic .Net, C/C++, Python
Text editing: MS Office, LaTeX
Graphics editing: Grace, Xfig, Gimp, Adobe Illustrator, Inkscape
High performance computing: ETH Brustus, QMUL Taurus, HPC Uniza
Optimization tools: XPRESS-IVE, cvxopt
Collaborative software: Basecamp, Asana

G. Language proficiency

Proficiency in Slovak and and English. Good communication skills in German.

H. Other skills and activities

Engineering inspector of electric equipment under 1000V
Driving licence (category B)

Žilina: April 1, 2015   Ľuboš Buzna