RESEARCH PORTFOLIO
2017
Faculty of information studies in Novo mesto (FIS) is an independent public higher education institution. Located in Novo mesto, a major industrial centre in Slovenia and Southeast Europe, we strive to take the leading regional role in education and research in computing and social sciences, exchanging knowledge with business environment and public administration. The Faculty has about 300 students at BA, MA and PhD levels, 70 members of the academic staff, and 10 members of administrative staff.

As of 2013 when we purchased our High Performance Computer (HPC), we are a part of the regional and European HPC landscape. We are also associated with the PRACE consortium (Partnership for Advanced Computing in Europe), the key European high-performance computing alliance.

While pursuing excellence in teaching and research, our institution has a strong project orientation, with over 70% of its budget coming from research and development projects at national and international level.

Our projects so far include:

- 2013-2016 “Complex Networks”. Slovenian research agency: **494,000 EUR**,  
- 2014-2020 “Online support for development of project proposals - S4P”. Slovenian research agency: **121,000 EUR**,  
- 2013-2016 “Unraveling Biological Networks”. Slovenian research agency: **120,000 EUR** (total consortium funding 150,000 EUR),

in addition to over 30 smaller projects where our financing is below 100,000 EUR.

As for our research philosophy, we believe that key scientific breakthroughs will come along the interdisciplinary interface between social and computational sciences. As detailed on the pages that follow, our competences include computational modeling, simulation and analysis in various domains of natural, social and data sciences, while the our backgrounds range from computer science, mathematics and physics to social sciences and economics.

We are interested in applying for all project calls whose scope broadly aligns with our scientific interests. You are kindly invited to express your interest for collaboration at project.office@fis.unm.si
Biljana Mileva Boshkoska

**Education**

- **2013**: **PhD in Computer Science**, Jožef Stefan Institute, Slovenia. Thesis: From qualitative to quantitative evaluation methods in multi-criteria decision models.
- **2008**: **MSc in Electrical Engineering**, Ss. Cyril and Methodius University, Macedonia. Thesis: Comparison of SVM regression models for prediction of parameter concentrations of ambient air.
- **2001**: **BSc in Electrical Engineering**, Ss. Cyril and Methodius University, Macedonia. Thesis: Control of a finger joint production line with SIMATIC S7-300 - a software aspects.

**Research Interests**

- Decision support systems, specifically ranking of qualitative multi-attribute decision options.
- Modelling of environmental systems.
- Process and Knowledge management, specifically developing simulation models for public and private health institutions.

**Publications**

Blaž Rodič

Education

- 2004: **PhD in Information Systems Management**, University of Maribor, Slovenia. Thesis: Distributed simulation support with mobile agents and XML.


Research Interests

- Development of new and original methods and tools for simulation and modelling (continuous and agent-based).
- Solutions for real-life optimization problems in manufacturing, transport/logistics and service systems within the regional and national economy.
- Development of multi-agent simulation models of societal and organizational systems.

Publications

Borut Lužar

**Education**
- 2013: **PhD in Mathematics**, University of Ljubljana, Slovenia. Thesis: Edge colorings and partitions.

**Research Interests**
- Graph colorings and related optimization problems.
- Structural properties of special classes of graphs (planar graphs, fullerenes, hypercubes).
- Graph-theoretic properties of complex networks, (parallel) algorithms.

**Publications**
Borut Rončević

Education
- **2003:** PhD in Sociology, University of Ljubljana, Slovenia. Thesis: Models of developmental strategies.
- **2000:** MA in European Social Policy Analysis, international consortium programme conducted at National University of Ireland, Maynooth (Ireland), Roskilde University (Denmark), University of Ljubljana (Slovenia). Thesis: Entrepreneurship: The role of structural funds facilitating SME development.
- **1999:** BSc in Sociology, University of Ljubljana, Slovenia. Thesis: The impact of the third sector in contemporary welfare states.

Research Interests
- Sociological theory and economic sociology, with a special emphasis on social systems theory and cultural political economy.
- Particular research topics include socio-cultural factors of development, regional systems of innovation, ethnicity/minorities and social costs of gambling.
- Research employed a variety of research methods, including fuzzy-set qualitative comparative analysis, statistical analysis, interviews and focus groups, as well as media content analysis.

Publications
5. F. Adam, B. Rončević, Social Capital: Recent Debates and Research Trends, Social Science Information 42(2) (2003), 155-183.
Dolores Modic

Education


- 2014: M.Phil. in Law, University of Ljubljana, Slovenia. Thesis: Separate opinions at the ECHR (with special emphasis on separate opinions of national judges).


Research Interests

- Technology Transfer, Licensing and IPR Commercialization, Innovations and Innovation Systems.
- Human Rights Law and IP Law.

Publications


Kristina Ban

Education

- 2013-present, PhD student in Informatics, Faculty of Information studies in Novo mesto, Slovenia. Thesis: A systematic comparison of network alignment algorithms: towards optimal aligner for PPI networks.

- 2013: MSc in Informatics, University of Rijeka, Croatia. Thesis: Memory Java applet.

- 2011: BSc in Informatics, University of Rijeka, Croatia. Thesis: Data modelling and preparation before programming.

Research Interests

- Fundamentals of complex systems, modeling social and biological complex networks.
- Algorithmic aspects of network analysis, specifically network alignment.
- Computational linguistics, language and information networks, culturomics.

Publications


Matej Makarovič

Education

• 1999: **PhD in Sociology**, University of Ljubljana, Slovenia. Thesis: Coordination of complexity as a problem of societal evolution.


Research Interests

• Sociological theory, political sociology and societal development.
• The studies of democratic mechanisms related to the social risks, as well as political and societal steering under the conditions of high complexity.

Publications


Matevž Tomšič

Education


• 1996: BA in Sociology, University of Ljubljana, Slovenia. Thesis: Culture or politics: dilemmas of intellectuals in central and eastern Europe.

Research Interests
• Quality of governance.
• The role of political actors, especially political (and other) elites.
• The character of political system.
• Democratisation and societal development.
• Media content analysis.

Publications
Nadja Damij

**Education**

- **2006**: PhD in **Information Management**, University of Ljubljana, Slovenia. Thesis: Modelling and simulation of business processes using the upgraded TAD methodology.

- **2005**: MPhil in **Knowledge Management**, University of Salford, UK. Thesis: Virtual business: A myth or reality.

- **2003**: MSc in **Managing Information Technology**, University of Salford, UK. Thesis: eLearning: an ingredient for success or just another new thing on the market?

- **2001**: BSc in **Economics**, University of Ljubljana, Slovenia. Thesis: Modelling of the transit process in the Kovinotehna company using TAD and UML methods.

**Research Interests**

- Process management, specifically developing process-oriented Tabular Application Development (TAD) methodology and linking it with analysis of business processes in public health organisations.

- Knowledge management, specifically developing knowledge concepts within the context of methodology for public and private health institutions.

- Information systems development.

**Publications**


**Riste Škrekovski**

**Educations**
- 2000: **PhD in Mathematics**, University Ljubljana, Slovenia. Thesis: Graph coloring.

**Research Interests**
- Graph theory and graph coloring.
- Mathematical chemistry.
- Various aspects of theoretical computer science.
- Graph-theoretic models of complex networks.
- Mathematics & Art.

**Publications**
Urška Fric

**Education**

- 2013: MSc in logistics, University of Maribor, Slovenia. Thesis: The impact of cargo handling on industrial paper roll damage in transport chain.


**Research Interests**
- Socio-cultural factors of industrial symbiosis
- Structuring of industrial symbiosis networks
- Industrial symbiosis networks analysis

**Publications**
Zoran Levnajić

**Education**
- 2005: **MSc in Mechanical Engineering**, University of California, Santa Barbara, USA. Thesis: Ergodic partition theory and visualization of invariant sets and resonances in discrete dynamical systems.
- 2002: **BSc in Physics**, University of Trieste, Italy. Thesis: Visualization of invariant sets in dynamical systems.

**Research Interests**
- Modeling and analysis of complex systems in nature and society.
- Mechanisms of self-organization in complex dynamical systems.
- Inverse problems of network reconstruction from empirical data.

**Publications**