

1. Andrea Vasekova

Computer logs represent a valuable source of monitoring information, being typically the only mechanism for gaining visibility into the behaviour of the monitored resources. Currently, most logs use an unstructured data format with the most relevant pieces of information embedded in free-form natural language messages, which tends to prevent them from being efficiently processed in an automated way. This paper elaborates on common problems and shortcomings in the domain of application logging, and presents a logging mechanism for Java language that produces logs in a unified and extensible format allowing for their efficient automated processing. The proposed logging mechanism is then evaluated from the point of view of log production and log processing. From the measurements, it is concluded that although the production of structured logs using the proposed logging mechanism introduces a slight overhead, this disadvantage is outweighed by the benefits brought about from the processing of the logs.

2. Adam Kucera (thesis)

Costs related to the operation of facilities (build environment, devices) represent a significant part of an organisation's expenses. To analyse the effectiveness and performance of facilities, advanced software systems are available on the market. Such systems focus mostly on the analysis of economical, human resources related, or static data concerning built environment. However, a large amount of precise, detailed and up-to-date information can also be gathered from building management systems (BMS) that integrate various building automation and electronic systems. The building operation data are currently unavailable for advanced analytical tools. This situation is largely attributable to two factors: inaccessibility of the BMS data and missing semantic information. The goal of the proposed thesis is to design systems architecture that will integrate BMS with other facility management software systems. More specifically, the thesis aims to simplify the development of front-end applications by providing easy to use data sources and interfaces, so the developers will be able to fully focus on analytical methods and user-oriented aspects of the applications. The architecture will provide connectors to the BMS system and ontology repository containing needed semantic information. Next, the thesis will provide an overview of typical queries (needed data sources and required parameters), and domain specific operators for data grouping, filtering and aggregation. The **architecture** will simplify the execution of such queries and developers will have the query typology at their disposal as a reference for BMS data processing. As a result, the proposed architecture will facilitate the development of analytical tools for BMS that are similar to those available for other parts of facility management.

3. Jindrich Pokora (a conference paper)

Title: Revisiting the Satisfaction-Profit Chain: The Case of Food Industry

Increasing food quality leading to higher customer satisfaction does not have to be a straightforward firm objective whenever it is related to an increase in costs. The purpose of this paper is to determine, whether providing higher quality is generally more profitable than pursuing the opposite. This paper approaches the relationship between firm profitability and customer satisfaction from the perspective of the satisfaction-profit chain, which here consists of the following measures: quality perceived by customers, customer satisfaction, willingness to recommend, intent to repurchase, and firm profitability. The research focuses on the one-year financial data of 80 food-manufacturing firms in the Czech Republic together with 60 to 160 customer responses to products of every firm, all of which are analyzed using quantitative methods. Preliminary findings show a positive relationship between perceived product quality, customer satisfaction, willingness to recommend, and intent to repurchase. Least squares regression shows intent to repurchase positively linked to firm profitability measured by the return on assets considering control variables offered by financial management theory, e.g.: liquidity or size. The regression further implies that smaller firms tend to be more profitable, when the size is measured by the volume of assets. To summarize, firms with higher perceived quality of their products, higher customer satisfaction, and higher intent to repurchase seem to experience better

financial outcomes, which in turn supports the implementation of a strategy based on a high product quality.

4. Jana Stará

WELLNESS PROGRAMMING FOR OLDER ADULTS

Purpose: The purpose of this paper was to identify highlights **for programming for** older adults, **programming** that would support one's multidimensional health.

Methods: We have reviewed current database articles about wellness programming.

Results: We have identified four basic components of current wellness programs for seniors; these are education (educate to promote health and quality life), empowerment (use an interactive style that promotes participation), community (create social support networks through peer interaction) and long-term character of intervention programs that **influence** health by influencing behavior and environment.

Conclusions: We suggest providing long-term education about relevant topics in a form that is easily applicable in everyday life. Socialization and social support are central to participation in these programs, and interpersonal engagement is particularly important when programming for older adults.

5. Eva Chaloupkova

Bacterial secreted proteins are key players in communication within bacterial communities and they also have a unique role in host-bacterial cross-talk. These proteins can be revealed by the prediction of signal peptide. Recently, it has been discovered that secreted proteins are more intrinsically disordered than proteins involved in intracellular cell processes.

We provide bioinformatical characterization of secreted proteins of 4000 finished bacterial genomes downloaded from the NCBI database. Based on the phenotype, proteomes were divided into two bins, pathogenic and commensal/probiotic. Secreted proteins were identified by SignalP algorithm. For phylogenetic characterization, Pfam database and COG (Clusters of Orthologous Groups) were used. Finally, for each protein, protein disorder was calculated using IUPred algorithm.

In agreement with previous studies, we confirmed that bacterial secreted proteins are more disordered than intracellular proteins. When we analysed pathogenic and commensal/beneficial proteins separately, we found out that pathogenic secreted proteins are significantly more disordered than commensal/beneficial ones. Then we analyzed sequences that can not be assigned to either Pfam database or COG. Using Blastp algorithm, we identified a new protein family, which appears to be connected to a/the pathogenic phenotype.

A thorough analysis of secreted proteins was performed on 4000 pathogenic and commensal/beneficial bacterial proteomes. We confirmed a higher protein disorder for secreted proteins. When we considered only pathogenic secreted proteins, we found significantly higher protein disorder values than in the whole dataset. After [conducting an] analysis of proteins which did not fall into any Pfam family or COG, we propose a new protein family, which appears to be connected with the involvement of protein in pathogenicity of the bacterial species.

6. Marija Nobilisova

International programs with disadvantaged youth

Theoretical background/conceptualization of research problem

(In my PhD thesis I am focusing on the impact of intercultural learning used in social work on international level on active participation of disadvantaged youth. This paper will form a chapter in my

thesis "Working with disadvantaged youth on international level: an impact of intercultural learning on social inclusion".)

While young people in present-day European societies face more choices, they are also exposed to greater risks under the influence of globalization, which destroys the clarity provided by stable structures in the past and creates changeability and insecurity.

Thousands of young people in Europe are dealing with broken relationships in their families, some of them are struggling with addictions, some live with physical or mental disabilities. NGOs and states in the EU use the term "disadvantaged youth" while working with these young people (IFSW, 2012). As studies have already shown, this target group is in considerable danger of social exclusion and even delinquency or crime paths (Kovacheva & Pohl, 2007). Entering an intercultural environment brings these youngsters out of their negative routines and disadvantaged contexts, into new contexts consisting of different cultures and interaction with people who do not have specific expectations from them. This enables them to develop a new perception of themselves, and to stimulate new responses to activate new actions.

There is a lack of conclusive information about international programs with disadvantaged youth in Europe. Kovacheva & Pohl (2007) inform about Youth in Action program conducted by the EU, which promotes and works with cooperation with neighboring countries, principles of connecting youth and intercultural dialogs, youth initiative and developing key social competencies. There might be other programs of this kind. The main purpose of this paper is to research such programs and present an overview of the current situation in this field.

The main research question of this paper is: Which international programs within social work are currently available for disadvantaged youth in Europe and what methods are used in them?

Apart from EU official programs for young people with disadvantages, there is a parallel network known in the world of non-profit sphere. Over 30 NGOs working with youth are connected in a non-formal international network called Synergy Group, with its headquarters in the Netherlands (OV, 2014). Altogether they organize youth exchanges and personal development training for disadvantaged youngsters.

This network offers a considerable sample of international and intercultural social work with mentioned target group and would serve as an appropriate main field for research I intend to do with it. The secondary purpose of this paper is thus summarizing the information in Synergy network and presenting methods used within it as a tool in social work. The research question is: Which programs within social work are currently available for disadvantaged youth in Synergy network and what methods are used in them?

To obtain the needed data, I plan to use a combination of techniques involving qualitative methods, namely: document analysis (detailed examination of literature) and semi-structured interviews with youth and social workers of Synergy network.

7. Petra Pasova

Introduction: The aim of our study was to compare keratometry measurements and central corneal thickness measurements obtained with three different ophthalmic devices to decide if they can be used interchangeably in clinical practice.

Methods: 43 healthy persons were included in the study (29 women and 14 men, average age 25 ± 3.5 years). Central corneal thickness (CCT) was measured with Scheimpflug HR imaging system (Pentacam), Allegro BioGraph and with ultrasound pachymetry (RXP OcuScan). Keratometry in two main meridians of the cornea (K1, K2) was measured with Pentacam, Allegro BioGraph and automated keratometer.

Results: The mean difference in K1-readings was $0.01 \pm 0.31D$ for BioGraph vs automated keratometer, $0.06 \pm 0.23 D$ for BioGraph vs Pentacam and $0.05 \pm 0.34D$ for automated keratometer and Pentacam. The mean difference in K2-readings was $0.29 \pm 0.45D$ for BioGraph vs automated keratometer, $0.11 \pm 0.28D$ for BioGraph vs Pentacam and $0.19 \pm 0.44D$ for automated keratometer and Pentacam. In all cases, the interdevice differences were statistically significant ($p < 0.05$). The mean difference in CCT was $4.57 \pm 7.84\mu m$ for BioGraph vs ultrasound, $4.33 \pm 7.55\mu m$ for BioGraph

vs Pentacam and $8.90 \pm 7.49\mu\text{m}$ for ultrasound vs Pentacam. The interdevice differences in CCT were also noted to be statistically significant ($p < 0.05$).

Conclusion: Our results suggest that the measurements of keratometry and CCT may differ significantly between the tested machines and should therefore not be used interchangeably in clinical practice.

Key words: keratometry, pachymetry, CCT, Pentacam, BioGraph

8. David Gesvindr

Title: Discussion on Smart Grid Modelling and Analysis towards the Quality by Design

Power grids worldwide are entering one of the biggest transformations since their inception. The Smart Grid becomes a strategic term, which is associated with promising technology enhancement on the one hand, but also high investment risks on the other hand. To maximize the first and minimize the second, power distribution companies are searching for methods and tools to simulate and compare different Smart Grid design alternatives and deployment scenarios. In this paper, we draw upon our involvement in the modelling and simulation of the future Smart Grid in the Czech Republic, and elaborate a discussion on the possible directions of Smart Grid modelling and analysis to reach the 'quality by design' before the actual Smart Grid realization. The discussion **then elaborates** a specific design challenge together with its context within the design of the Czech Smart Grid.

9. Anna Krchnava

Title: Participatory approach in low-threshold drop-in centres for non-organised youth

The application of the participatory approach in low-threshold drop-in centres for non-organised youth depends on various conditions ranging from the institutional and organisational level, through to the level of youth workers and the level of the youth itself. This dissertation aims to define conditions on any of these levels that prevent real participation of the youth. Applying participatory approach means including the youth - "clients" of social services in the decision-making process. participation is a way of empowerment and should gradually enable better access to resources and taking responsibility over one's life. A low-threshold drop-in centre for non-organised youth is a specific type of social service focusing mainly on social prevention. Thanks to its rather informal settings and unique methods of youth work, participation can easily take place in this type of social service. A case study of a chosen youth centre is supposed to show how conditions on all four levels determine the application and actual results of participatory approach in youth work and raise questions of the limiting, and equally, facilitating factors.

10. Vera Jancurova

The present study was conducted to analyze origins of the crises from the behavioral finance point of view, which offers an alternative way to study neoclassical paradigms of economy. The origins of the crises were analyzed for the presence of psychological influence, including emotion, cognition and aspiration. Of the behavioral biases proofed, many were present at the beginning of the bubble. However the most significant influences were shown to have been overconfidence, over-optimism, underestimation of risk and herding. The study shows that behavioral biases **were present** at the market during the origin of the crises and this may cause serious discrepancies from the market equilibrium. The article reveals that findings of behavioral finance may help to avoid disturbing the stability of financial markets.

