

ANNULAIRE REPPORT
OF DEPARTMENT "SOFT COMPUTING"
FOR 2008

I. Publications

1. Articles in Refereed Journals and books

1. Popchev I., P. Georgieva. A fuzzy approach to solving multicriteria investment problems. In: M. Iskander (Edr), *Innovative Techniques in Instruction Technology, E-learning, E-assessment and Education*, Springer Science+Business Media B.V., pp. 427-431, 2008, ISBN: 978-1-4020-8738-7.
2. Savov, S., I. Popchev. New upper bounds for the CALE: A singular decomposition approach. *International Journal of Control and Automation Systems*, vol. 6, No 2, pp.288-294, 2008, ISSN: 1598-6446.
3. Savov, S., I. Popchev. New generalized upper trace bound for the solution of the Lyapunov equation, *International journal of pure and applied mathematics*, vol. 49, No. 3, pp. 381-389, 2008. ISSN 1311-1728.
4. Ganchev, M. O'Droma, D. Meere, M. Ó hAodha, S. Stojanov, "M-learning and m-teaching architectures and the integration of evolving multi-campus educational support e-services." In "M-libraries." *Gill Needham and Mohamed Ally (Eds)*, 352, pp 159-172, 2008, ISBN: 978-1-85604-648-0
5. Ganchev, I., S. Stojanov, M. O'Droma, D. Meere, Infostation-Based Adaptable Provision of M-Learning Services: Main Scenarios, *International Journal "Information Technologies and Knowledge" Vol.2*, pp. 475-482, 2008, ISSN 1313-0455.
6. Попчев И., Н. Велинова. Управление на риска на портфейли от ценни книжа чрез оптимално хеджиране. *Икономически алтернативи*, бр.1, стр. 7-21, 2008, ISSN 1312-5281.
7. Попчев И., И. Радева. Накратко за възможностите на кредитните деривативи. *Финансови иновации – изследвания и практики*, Издателство на Нов български университет, стр. 115 – 135, 2008, ISBN 978-954-535-502-8.
8. Радева, И. Многоетапна схема за оценка на инвестиционна привлекателност. *Финансови иновации – изследвания и практики*, Издателство на Нов български университет, стр. 135 - 155, 2008, ISBN 978-954-535-502-8.
9. Konstantinov M., P. Petkov, I. Popchev, V. Angelova: Perturbation bounds for the matrix equation $C + \sum_{i=1}^r A_i X B_i - D X^s E = 0$. *Comptes rendues de l'Académie bulgare des Sciences, Mathématiques, Mathématiques appliqués*, vol. 61, No 9, pp. 1111-1120, 2008, ISSN: 1310-1331.
10. Konstantinov M., P. Petkov, I. Popchev, V. Angelova: On the sensitivity of the matrix equation $XA - AX = X^2$. *Cybernetics and Information Technologies*, vol. 2, pp. 3 – 16, 2008, ISSN: 1311-9702.
11. Marinova-Boncheva V.N., A short survey of intrusion detection systems, *Проблеми на техническата кибернетика и роботика*, кн. 58, София, стр. 23-30, 2007, ISSN 0204-9848.
12. Marinova-Boncheva, V. Using the agglomerative method of hierarchical clustering as a data mining tool in capital market, *International Journal Information Theories & Applications – IJ ITA*, vol. 15, No 4, pp. 382-386, 2008, ISSN 1310-0513.
13. Peneva, V., I. Popchev. Fuzzy criteria importance with weighting functions, *Compt. Rend. Acad. Bulg. Sci.*, 61 (3), pp. 293-300, 2008, ISSN: 1310-1331.
14. Peneva, V., I. Popchev. Fuzzy criteria importance depending on the membership degrees of fuzzy relations, *Compt. Rend. Acad. Bulg. Sci.*, 61 (5), pp. 579-584, 2008, ISSN: 1310-1331.
15. Peneva, V., I. Popchev. Multicriteria decision making based on fuzzy relations. *Cybernetics and Information Technologies* 8 (4), 2008, pp. 3-12, ISSN: 1311-9702.

16. Popchev I., I. Radeva, Multi-Criteria Scheme for MAP-Cluster Identification, *Problems of Engineering Cybernetics and Robotics*, vol. 58, pp. 3-12, 2007 ISSN: 0204-9848.
17. Popchev, I., Review of "Adaptive inverse control: a signal processing approach" In *Bernard Widrow, Eugene Walach (Eds), Bioautomation*, No 10, pp. 116 – 118, 2008, ISSN 1313-261X
18. Savov, S., I. Popchev. On the degree of polynomial in the uncertainty valid Lyapunov functions for polytopic systems. *Compt. Rend. Acad. Bulg. Sci.*, vol. 61, No 10, pp.1335-1338, 2008, ISSN: 1310-1331.
19. Stoyanov, St., V. Valkanova, I. Popchev, I. Minov. A scenario-based approach for the creation of a virtual environment for secondary school instruction, *Cybernetics and Information Technologies* 8 (3), pp. 86-96, 2008, ISSN: 1311-9702.
20. Stoyanov, St., I. Ganchev, I. Popchev, M. O'Droma, An approach to the development of infostation-based elearning architectures, *Compt. Rend. Acad. Bulg. Sci.*, vol. 61, No 9, pp. 1189-1196, 2008, ISSN: 1310-1331.
21. Попчев И., К. Владимиров, Д. Панайотов, Н. Стефанов, Р. Панчев, В. Драмалиев, К. Хаджиев, Н. Маринов. Мениджмънт и лидерство, Д. Панайотов (ред.) *Нов български университет*, София, стр. 227, 2008, ISBN 978-954-535-499-1
22. Geo Gatev, Vera Angelova, "Systèmes linéaires de commande", Manuel de travaux dirigés et de travaux pratiques , Université technique de Sofia, Sofia 2008, ISBN 978-954-438-731-0

2. Articles in Proceedings of Conferences and Symposiums

1. Ganchev, I., S. Stojanov, D. Meere, M.O'Droma, InfoStation-based mLearning System Architectures: Some Development Aspects, In: *Proc. of the 8th IEEE International Conference on Advanced Learning Technologies (ICALT'08)*, 1-5 July 2008, Santander, Spain, pp. 504-505, 2008, ISSN 1613-0073.
2. Ganchev, I., M. O'Droma, D. Meere, S.Stoyanov, M. Ó hAodha, On InfoStation-Based Mobile Services Support for Library Information Systems, In: *Proc. of the 8th IEEE International Conference on Advanced Learning Technologies (ICALT'08)*, 1-5 July 2008, Santander, Spain, pp. 679-681, 2008, ISSN 1613-0073.
3. Kabakchieva, D., Stefanova, K., Nikolov, R. (2008). Enterprise Interoperability Value Proposition: A Practical Case Analysis. In: *Proc. of the 14th International Conference on Concurrent Enterprising*, Lisbon, Portugal, 2008, pp.899-906, 2008, ISBN 978 0 85358 244 1.
4. Kabakchieva, D., Stefanova, K., Nikolov, R., Kissimov, V. Interoperable Management Conceptual Architecture for EU eGovernment Services. In: *Proc. of the 2nd International Conference on Methodologies, Technologies and Tools enabling e-Government (MeTTeG08)*, Ionian University, Corfu, Greece, 2008, pp.13-22, 2008, ISBN 978-88-7589-337-8.
5. Stoyanov S., N.Govedarova, I.Popchev, A Knowledge-Intensive CBR Application for Content-Based Retrieval in BULCHINO Catalogue, In: *Proc. of the Conference "Concurrency, Specification and Programming '2008"*, Vol.1, Gross Vaeter, Germany, 29 September - 1 October 2008, pp. 168-180, 2008 ISSN 0863-095X
6. Stoyanov, S., D. Mitev, I. Minov, T. Glushkova, eLearning Development Environment for Software Engineering Selbo 2, In: *Proc. of the 19th International Conference on Database and Expert Systems Application (DEXA 2008)*, 1-5 September 2008, Turin, Italy, pp. 100-104, 2008, ISBN: 978-3-540-85653-5.
7. Stoyanov, S., I. Ganchev, M. O'Droma, D. Mitev, I. Minov, Multi-Agent Architecture for Context-Aware mLearning Provision via InfoStations, In: *Proc. of the 5th International Conference on Soft Computing as Transdisciplinary Science and Technology*, October 28-31, 2008, Paris, pp.549-552, 2008, ACM 978-1-60558-046-3/08/0003.
8. Stojanov, S., R. Vlahova, Linguistic Database in an Intelligent Portal for Education and Information ("Found in the Net"), In: *Proc. of the 6th International Conference Formal Approaches to South Slavic and Balkan Languages*, 25-28 September 2008, Dubrovnik, Croatia, pp.115-120, 2008, ISBN 978-953-55375-0-2.

9. Govedarova N., S.Stoyanov, I.Popchev, Hybrid Ontology and CBR-Based Search in BULCHINO Catalogue, In: *Proc. of the International Conference "Informatics in the Scientific Knowledge 2008"*, 26-28 June 2008, Varna, pp.205-216, 2008. ISSN 1313-4345, ISBN - 10:954-715-303-X, ISBN-13:978-954-715-303-5
10. Marinova-Boncheva V.N. Data mining techniques for managing information security, In: *Proc. of the International Workshop Distributed Computer and Communication Networks Theory and Applications*, 20-23 October 2008, Sofia, Bulgaria, pp. 174-178, 2008, ISBN 978-5-901158-09-8.
11. Govedarova N., S.Stoyanov, I.Popchev, An Ontology-Based CBR Architecture for Knowledge Management in BULCHINO Catalogue, In: *Proc. of the International Conference "Computer Systems and Technologies 2008"*, 12-13 June, Gabrovo , pp. V5.1-V5.6, 2008, ISBN 978-954-9641-52-3.
12. Stoyanov, S., I.Ganchev, I.Popchev, M.O'Droma, Service-oriented and Agent-based Approach for the Development of InfoStation eLearning Intelligent System Architectures, In: *Proc. of the IS 2008 – IEEE International Conference on Intelligent Systems*, Varna, Bulgaria, September 6-8, pp.6-20-6-25, 2008, ISBN 978-1-4244-1740-7.

II. Research Scientific Projects

1. "Investigation of decision making models in fuzzy environment", Bulgarian Academy of Sciences
2. "Study of data mining and knowledge discovery models for improving computer network security, Contract with the Ministry of Education and Science

III. Applied projects

1. "Innovation information technologies in wind turbine electro – generator fields design" – contract with NCSME and "Freemasantry" Ltd.
2. "Multi-criteria model for investment preference assessment of economic enterprises" – contract with "Agrotrade – Pavlovy" Ltd. – Plovdiv.
3. "Information technology for investment preference assessment in structural integration of small and medium enterprise" - contract with NCSME "Argitrage" Ltd.
4. "Design and preliminary assessment of developed in MIA documentation for partial assistance of investigating police by information technologies incorporation", project with Ministry of internal affairs
5. "Communication device in technical security systems", contract with "Sektron" Ltd.

IV. Teaching activity

- "Risk management", IFM
- "Risk analysis", New Bulgarian University
- "Risk analysis", IFM
- "Risk valuation and management", New Bulgarian University
- "Systèmes linéaires de commande", TU Sofia
- "Financial Markets and Instruments" , New Bulgarian University
- "Money and Capital Markets", New Bulgarian University