SEMINAR ZA RAČUNARSTVO I PRIMENJENU MATEMATIKU
Matematički Institut SANU, Beograd, Knez Mihajlova 36

SEMINAR INSTITUTA ZA INFORMACIONE SISTEME,
Fakultet organizacionih nauka, Beograd, Jove Ilića 154

IEEE Chapter Computer Science (CO-16), Beograd, Srbija

PLAN RADA SEMINARA ZA JUN 2015. GODINE

Utorak, 02.06.2015. u 14:15, soba 301f, MI SANU :
Vladimir Baltić, Matematička gimnazija i FON

PERMUTACIJE SA OGRANIČENJIMA

Rezime: U ovom predavanju osvrnućemo se na različite metode prebrojavanja velikog broja kombinatornih objekata: permutacija, varijacija, kombinacija, podskupova uz neka dodatna ograničenja. Razvili smo potpuno nov metod za prebrojavanje nekih od ovih objekata i uspostavili veze među nekim od njih. Dali smo i osvrt na algoritamsku složenost novog metoda i analizirali u čemu je bolji od postojećih. Tim metodama odredili smo stotinjak novih nizova, koje smo uvrstili u Slounovu enciklopediju celobrojnih nizova i dali komentare na neki broj postojećih nizova.

Utorak, 09.06.2015. u 14:15, soba 301f, MI SANU :
Borko Furht, Professor and Director of the NSF Industry/University Cooperative Research Center for Advanced Knowledge Enablement Department of Computer & Electrical Engineering and Computer Science Florida Atlantic University (FAU), Boca Raton, Florida, USA

CREATING ENTREPRENEURIAL UNIVERSITY

Abstract: In this talk we present non-traditional, radical university arrangements that we implemented in the College of Engineering and Computer Science at FAU in order to create an Entrepreneurial University. In the present state of the economy, research funding has been drastically reduced - these are chances for universities. However, universities can only effectively become incubators of entrepreneurship and innovation if they themselves practice entrepreneurship. This "re-conceptualization" involves non-traditional, often radical university arrangements. The backbone of our new concept is the NSF-sponsored Industry/University Cooperative Research Center for Advanced Knowledge Enablement with 30 industry members, a more than 30 applied research projects. The university has created Research Park at university premises with more than 40 high-tech companies and an incubator with 25 start-up companies. As part of our strategy, we established various kinds of collaborations with these companies. We also have a strong Industry Advisory Board with 25 industry executives who advice the Center's researchers in selecting and managing the industry projects. Finally, we created joined industry/university laboratories, in which our faculty and students work jointly with industry scientists and engineers in creating innovative systems and products. In the talk, we also present several research projects and its applied results in the area of multimedia, big data, and health informatics.

Short biography: Borko Furht is a professor in the Department of Electrical & Computer Engineering and Computer Science at Florida Atlantic University (FAU) in Boca Raton, Florida. He is also Director of the NSF-sponsored Industry/University Cooperative Research Center on Advanced Knowledge Enablement at FAU. Before joining FAU, he was a vice president of research and a senior director of development at Modcomp (Ft. Lauderdale), a computer company of Daimler Benz, Germany, a professor at University of Miami in Coral Gables, Florida, and a senior researcher in the Institute Boris Kidric-Vinca, Yugoslavia. Professor Furht received Ph.D. degree in electrical and computer engineering from the University of

Belgrade. His current research is in multimedia systems, video coding and compression, 3D video and image systems, wireless multimedia, Internet and cloud computing, and social networks. He is presently Principal Investigator and Co-PI of several multiyear, multimillion dollar projects. He is the author of numerous books and articles in the areas of multimedia, computer architecture, real-time computing, and operating systems. He is a founder and editor-in-chief of the Journal of Multimedia Tools and Applications (Springer) and he recently co-founded Journal of Big Data (Springer). He has received several technical and publishing awards, and has consulted for many high-tech companies including IBM, Hewlett-Packard, Xerox, General Electric, JPL, NASA, Honeywell, and RCA. He has also served as a consultant to various colleges and universities. He has given many invited talks, keynote lectures, seminars, and tutorials. He served as Chairman and Director on the Board of Directors of several high-tech companies and as an expert witness for Cisco, Qualcomm, Adobe, and Bell Canada.

Utorak, 16.06.2015. u 14:15, soba 301f, MI SANU :
dr Nebojša Malešević, Tecnalia Serbia doo, i Istraživačka grupa za Biomedicinsku Instrumentaciju i Tehnologije, Univerzitet u Beogradu - Elektrotehnički fakultet.

SISTEM ZA FUNKCIONALNU ELEKTRIČNU STIMULACIJU BAZIRAN NA ELEKTRODAMA SA VEĆIM BROJEM PROVODNIH POLJA

Rezime: Predmet istraživanja predstavljenih u ovom predavanju je analiza efekata pri primeni površinske matrične elektrode i projektovanje sistema koji optimizuje funkcionalnu upotrebu stimulacionog sistema. Istraživanja su usmerena rešavanju otvorenih problema u oblasti funkcionalne električne stimulacije. Tu se prvenstveno misli na protokol za ostvarivanje selektivne stimulacije, zatim na metodu za smanjenje mišićnog zamora pri FES-u i nove algoritme namenjene kontroli ovako kompleksnog sistema. Prostorno-vremenskim distribuiranjem stimulacionih impulsa na više polja elektrode došli smo do novog obrasca električne stimulacije koji uz poboljšanje mogućnosti FES sistema baziranih na matričnim elektrodama donosi i višestruko uvećanje kontrolabilnih stepeni slobode što iziskuje "inteligentne" algoritme upravljanja.

Utorak, 23.06.2015. u 12:15, soba 301f, MI SANU :
dr Andrej Savić, Istraživačka grupa za Biomedicinsku Instrumentaciju i Tehnologije, Univerzitet u Beogradu - Elektrotehnički fakultet, i Tecnalia Serbia doo

UPRAVLJANJE REHABILITACIONIM SISTEMIMA BAZIRANO NA MOZAK-RAČUNAR INTERAKCIJI

Rezime: Sistemi čiji je rad baziran na interakciji mozga i računara mogu iskoristiti karakteristične promene moždane aktivnosti korisnika kao kontrolne signale određenog uređaja. Različiti mentalni zadaci ili spoljašnji stimulusi (vizuelni, auditivni ili somatosenzorni) indukuju promene koje su kodirane u spontanoj neuralnoj aktivnosti. Generisane promene se mogu identifikovati merenjem moždanih signala koji predstavljaju direktnu ili indirektnu meru električne aktivnosti mozga. Kao rezultat, namera korisnika da izvrši određenu motornu radnju može se identifikovati direktno na kortikalnom nivou i pretvoriti u upravljački signal uređaja, bez uključivanja perifernog motornog sistema tj. korisniku se može obezbediti mogućnost "upravljanja bez fizičkog pokreta", što predstavlja novi obećavajući pravac neuroehabilitacije.

Rukovodioci seminara:

MI SANU: Vera Kovačević-Vujčić
Milan Dražić

FON: Zorica Bogdanović
Marijana Despotović-Zrakić

IEEE: Božidar Radenković