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5th Global Conference on Computer Engineering

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Abstracts Books

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KEYNOTES

Prof. Dr. Asaf Varol
Chair of Department of Software Engineering
College of Technology, Firat University (Turkey)

Keynote Title: "Digital Transformation"

Bio. He completed his German Language Education between 1972 and 1973 in Germany. He finished his Machine Engineering Training Course in 1975 in Kassel/Germany with the support of IAESTE grant. He completed his BSc. study at Firat University/Turkey where he was the honored student (highest GPA among students) at the Department of Mechanical Engineering, and he started his MSc. study at the Institute for Nuclear Energy of Istanbul Technical University (ITU) in 1977. He had started as an Engineer at ITU Research Reactor in 1978, and after finishing his master study he had begun to work as a Research Assistant at Firat University in 1979. Between 1981 and 1982 he completed his dissertation experiments at Karlsruhe University in Germany with DAAD scholarship and later earned his PhD from Karadeniz Technical University (KTU) in 1983. He joined academic studies in the field of Computer Systems at Indiana and Purdue Universities in the USA via World Bank scholarship. He was promoted to Associate Professor in Energy Education in 1991. He established first local University Television Broadcasting System at Firat University. This system has been broadcasting continually since 1991. He was appointed for the position of Director of Revolving Funds Management of Technical Education College between 1991 and 1996. In 1992, he joined Salford and Bradford Universities in UK for academic studies on computer aided education and design. In 1995, he was invited to Oklahoma State University in the USA to have studies on Vocational and Technical Education, and Informatics. He was promoted to "Full Professor" in the field of Computer Systems Education in 1997. He used DAAD scholarship to work on a project in the field of Robotics at Bremen University/Germany in 1998. Between 1998 and 1999, he took the charge to combine the revolving funds management at Firat University. Specifically, he prepared the regulations and directives related with revolving funds management.

He served as the member of National Informatics Committees at Higher Education Council of Turkey (HECT) between 1999 and 2002. Between 2000 and 2004 he was the founder Dean of Communication College. Between 2003 and 2005, he taught different courses titled Analysis-Engineering Systems, Advance Mechatronics, Pro/Engineer (Solid Modeling), and Statics at West Virginia University in the USA. He was the founder vice president of Siirt University between 2007 and 2008. He held also the Dean of College of Education at Siirt University at the same time. He was Firat University's coordinator for the "East Anatolia Development Project" that supported by Ministry of Development of Turkey between 1998 and 2001. Prof. Dr. Asaf Varol was the Director of the Revolving Funds Management of Firat University between 2008 and 2012. He has been serving as the Chair of Software Engineering Department at Firat University since 2011. He taught Introduction to Digital Forensics and Information Assurance Course at Sam Houston State University in Fall 2013. He is the founder of the Department of Digital Forensics Engineering at Firat University that is the still unique and first in Turkey. He has established a dual degree program between Firat University and Sam Houston State University in 2012. He is the founder of the Association of Software and Cyber Security in Turkey (http://www.softcybersec.org) which aims to create and develop national software for up-to-date technologies and to defense country against cyber-attacks. He was founder of the International Symposium on Digital Forensics and Security (http://www.isdfs.org) in 2013. This symposium is organized by consortiums members of Sam Houston State University (SHSU-US), University of Arkansas at Little Rock (UALR-US), San Diego State University (US), Youngstown State University (US), Petru Maior University, Romania; Politechnic Institute of Cavado and Ave, Portugal, Firat University (TR), Gazi University (TR), Hacettepe University (TR), Balikesir University (TR), Baskent University (TR), HAVELSAN (TR), and Arab Open University (Lebanon). This symposium has been supported by IEEE since 2016. He was elected as External Quality Examiners of Higher Education Council of Turkey in 2017 and he evaluated the education system of Abant İzzet Baysal University in 2017. He graduated from the Master program in Public Administration at Sam Houston State University on May 13th, 2017. He is fluent in English and German languages. He is married to Nurhayat and have two sons with three grandchildren. He has published more than 300 journal papers, books, proceedings, and he has been a columnist at BT/Haber and Gunisigi Newspapers since 1997 where he has a dedicated column.

Prof. Dr. Osman Adıgüzel
Department of Physics, Firat University, 23169 Elazig, Turkey

Keynote Title: "Physical Aspects and Nanoscale Characterization of Successive Transformations in Shape Memory Alloys"

Bio; Dr. Osman Adiguzel was born in 1952, Nigde, Turkey. He graduated from Department of Physics, Ankara University, Turkey in 1974 and received PhD- degree from Dicle University, Diyarbakir-Turkey in Solid State Physics with experimental studies on diffusion less phase transformations in Ti-Ta alloys in 1980. He studied at Surrey University, Guildford, UK, as a post-doctoral research scientist in 1986-1987, and his studies focused on shape memory alloys. He worked as research assistant, 1975-80, at Dicle University, Diyarbakir, Turkey. He shifted to Firat University in 1980, and became professor in 1996, and He has already been working as professor. He published over 45 papers in international and national journals, He joined over 60 conferences and symposia in international and national level with contributions of oral or poster, and He supervised 5 PhD- theses and 3 M.Sc. theses. Dr. Adiguzel served his directorate of Graduate School of Natural and Applied Sciences, Firat University in 1999-2004. He received a certificate which is being awarded to him and his experimental group in recognition of significant contribution of 2 patterns to the Powder Diffraction File – Release 2000. The ICDD (International Centre for Diffraction Data) also appreciates cooperation of his group and interest in Powder Diffraction File. Scientific fields of Dr. Adiguzel are as follow: Martensitic phase transformations and applications to copper-based shape memory alloys, molecular dynamics simulations, alloy modeling, x-ray diffraction, and electron microscopy.

Abstract: Shape memory alloys are stimulus responsive materials and take place in the class of smart materials exhibiting a peculiar property called shape memory effect. Thermal and stressing processes govern shape memory effect in bulk level in physical basis. Shape memory behaviour is performed thermally in a temperature interval on heating and cooling after deformation in low temperature phase condition. The origin of this phenomenon lies in the fact that the material changes its internal crystalline structure with changing temperature, by means of crystallographic transformations. Successive crystallographic transformations, thermal induced and stress induced martensitic transformations govern this behaviour in nanometer scale, with twinning and detwinning processes in crystallographic basis. Thermal induced martensitic transformation occurs as martensite variants with lattice twinning in atomic scale, in materials on cooling below martensite finish temperature. Twinned martensite structures turn into detwinned martensitic structure by means of stress induced transformation by stressing material in martensitic condition. Twinned structures can be easily deformed through variant reorientation/detwinning process, in low temperature condition. Therefore, martensite is called soft phase and austenite is also called hard phase. Thermal induced martensitic transformation is lattice-distorting phase transformation and occurs as martensite variants with the cooperative movement of atoms by means of shear-like mechanism. Martensitic transformations occur by two or more lattice invariant shears on a {110}-type plane of austenite matrix which is basal plane or stacking plane for martensite, as a first step, and the transformed region consists of parallel bands containing alternately two different variants. In these alloys, the lattice of high temperature austenite phase has higher crystallographic symmetry than that of the low-temperature product phase.

Copper based alloys exhibit this property in metastable β-phase region, which has bcc-based high temperature parent phase structures martensitically turn into the complex stacking ordered structures with lattice twinning reaction on cooling. Lattice invariant shears are not uniform in copper-based shape memory alloys, and the ordered parent phase structures martensiticaly undergo the non-conventional complex layered structures on cooling. The long-period layered structures can be described by different unit cells, depending on the stacking sequences on the close-packed planes of the ordered lattice. The close-packed planes exhibit high symmetry and short-range order as parent phase. The unit cell and periodicity is completed through 18 layers in direction z, in case of 18R martensite, and unit cells are not periodic in short range in direction.

In the present contribution, x-ray diffraction and transmission electron microscope studies were carried out on two copper based CuZnAl and CuAlMn alloys. These alloy samples have been heat treated for homogenization in the β-phase fields. X-ray diffraction profiles and electron diffraction patterns reveal that both alloys exhibit super lattice reflections inherited from parent phase due to the displacive character of martensitic transformation. X-ray diffractograms taken in a long-time interval show that diffraction angles and intensities of diffraction peaks change with the aging time at room temperature, In particular, some of the successive peak pairs providing a special relation between Miller indices come close each other, and this result leads to the rearrangement of atoms in diffusive manner.

Prof. Dr. Joaquim Jorge
Department of Informatic, University of Lisbon
Editor-in-Chief, Computers & Graphics *(Indexed in SCI)*

Bio: Joaquim Jorge is Full Professor of Computer Science at Instituto Superior Técnico (IST/UTL), the School of Engineering of the Technical University of Lisboa, Portugal, where he teaches User Interfaces and Computer Graphics. He received PhD and MSc degrees in Computer Science from Rensselaer Polytechnic Institute, Troy, NY, in 1995 and a BsEE from IST/UTL in 1984. He was co-chair of Eurographics'98, which took place in Lisboa, Portugal. He has served as **general chair or program chair** for many conferences, including International Conference on CAD/Computer Graphics 2013 (Hong Kong), IUI 2012, INTERACT 2011, ECCE'2008 (Funchal, Madeira), CAe2008 (Portugal), WSCG 2006 (Plz, Czech Republic – program co-chair), EGVE'06 and EUROVIS'06 (Lisbon, Portugal May 2006) and EG SBM'05 (Dublin, September 05), SBM'04 (Grenoble, France, September 04), EGMM04 (Nanjing, PRC, October 04) Workshops and EG MM01 (Manchester 2001). A long-time practitioner of Computer Graphics, he first joined the Eurographics Association (EG) in 1986, helped organize the first Portuguese Computer Graphics Meeting in 1988 and was a founding member of the Eurographics Portuguese Chapter. He leads the EG Working Group on Sketch-Based Interfaces and Modeling, served on the EG Promotions Board from 2002 to 2006, on the EG Publications Board from 1997 to 2000, was EG Conference Monitoring Officer for EG2001 and was elected member of the Associations' Executive Committee from 2000 to 2006. He also serves on the Steering Committees of Expressive Graphics, Computational Aesthetics and NPAR (Non-Photorealistic Animation and Rendering) conference series.
He was invited as proposal evaluator for the ITR program of the National Science Foundation in 2000, 2001 and 2003 and EU's IST Fifth framework program, EUREKA and related consultation meetings on many different occasions. He has been a member of several research projects both at the National and European Level, Including MAXIMUS, IMPROVE and Eurotooling 21 research projects. He was Principal Investigator (PI) of the Smart Sketches (IST-2000-28169) project, and led the Alfa INETGAM II-0072-A network of excellence, both started in 2001. He also leads the CGEMS international project, co-funded by the EC Eurographics and SIGGRAPH Associations since September 2002. He participated in several European projects connected to graphics and graphics standardization efforts as a researcher with the Portuguese Computer and Systems' Engineering Institute (INESC) CAD/CAM group from 1984 to 1989. He was a consultant with FhG/IGD in Multimodal Interfaces (1999). He serves or has served on the program committees of over 170 international conferences. Since 2007 he is Editor in Chief of *Computers & Graphics Journal* and serves or has served on the board board for six other international journals. He is affiliated with ACM (Distinguished Member since 2017, Senior Member since 2007) / SIGGRAPH since 1989, IEEE Computer Society (Senior Member since 2000), IAPR, and was chairman of the Eurographics Portuguese Chapter from 2000-2008. He served as IFIP TC13 (Human Computer Interaction) National Representative from 2000 to 2013. He served on the ACM/SIGGRAPH Educational Committee since 2004-2011 and Small Conferences Committee since 2008. He has also served on the EG Education Board since its inception in 2001. Since Juy 2014 he is Chair of the ACM SIGGRAPH Specialized Conferences Committee. He is

an ACM Distinguished Speaker since 2015 and a Member of the ACM Europe Council since 2015. Joaquim Jorge's interests are in Calligraphic and Multimodal User Interfaces, Visual Languages and Pattern Recognition techniques applied to Human-Computer Interaction. He is author or co-author of over 260 papers published in peer-reviewed international conferences and publications. He was elected Fellow of the Eurographics Association in 2010. In 2014 he was given the IFIP Silver Core Award for his services to IFIP TC13.

Prof. Dr. Ahmet KAÇAR
Kastamonu University
Faculty of Education, Kastomonu,
Turkey

Keynote Title: "Matematik ve Sanat. Matematik ve Sanat İlişkisine Matematik Eğitimi Açısından Bir Bakış"

"Mathematics and Art. A View from the Perspective of Mathematics Education to Mathematics Education"

Bio: Ahmet Kaçar was born in Kastamonu, Turkey. He received the Bachelor of Science degree in Mathematics in 1984, the Master of Science degree in applied mathematics in 1986 and the Doctor of Philosophy degree in applied mathematics in 1990 from Ataturk University, Erzurum, Turkey. In 1990 he was an Assistant Professor and lectured at Mathematics Department of Atatürk University until 1995 in which he joined the Department of Mathematics Education, Kastamonu School of Education, Gazi University, Turkey, as lecturer and researcher. He became an Associate Professor in 1999 and a Professor in 2005. He is the author of papers and books in mathematics and mathematics education. His research interests are applied mathematics in mathematics; teacher education and elementary mathematics education in mathematics education.

Ahmet KAÇAR is currently the Professor of the Mathematics Education Department and Dean of Arts and Dizayn Faculty of Kastamonu University. He serves as the Editor of Kastamonu University Kastamonu Education Journal since 1997.

ABSTRACTS

Using New Techniques in Teaching English Grammar In Iraq

Bushra Saadoon Alnoori, Baghdad University

Abstract

The research is talking about using new techniques in teaching English Grammar in Iraq such as ,teaching Grammar through games,songs,snaks and jokes

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Contribution to PI Control Speed of a Doubly Fed Induction Motor

Zerzouri Nora, University Badji Mokhtar Annaba

Abstract

Our contribution in this work consists of the study and control of a doubly fed induction machine (DFIM) operating in motor mode using a control based on the orientation of the rotor flux. At first, we were interested in the study of the functioning principle of the DFIM and its modeling. In a second time, we were interested in the modeling of the inverter SVPWM levels and finally we realized the implementation of the control by orientation of the rotor flow on the Matlab / Simulink environment. The analysis of the simulation results of this control approach clearly shows that the system perfectly follows the reference values and, consequently, provides a good static and dynamic performance of the machine under study.

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Graph Clustering Based Size Varying Rules for Lifelong Topic Modeling

Muhammad Taimoor Khan, Bahria University, Islamabad, Pakistan

Abstract

Lifelong learning topic models identify the hidden concepts discussed in the collection of documents. The concepts are represented as topics having groups of ordered words based on their relevance to the topic. Lifelong learning models have an automatic learning mechanism which allows continuous learning without external support. In the process, the model gets more knowledgeable with experience as it learns from the past in the form of rules. It is carries rules to the future and utilize them when a similar scenario arise in future. The existing lifelong learning topic models heavily rely on statistical measures to learn rules that leads to two limitations. The rules are evaluated for fixed number of words while ignoring the natural arrangement of words within the documents. Moreover, the rules have arbitrary orientation that causes repeated patterns of transferring the impact of a rule into a topic during the early iterations of the inference technique. In this research work, we introduce complex networks analysis for learning rules which addresses both of the limitations discussed. The rules are obtained through hierarchical clustering of the complex network that have different number of words within a rule and have directed orientation. The proposed approach improves the utilization of rules for improved quality of topics at higher performance with unidirectional rules on the standard lifelong learning dataset.

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Engineering and Teaching : What is the difference?

Hatice Ferhan Odabaşı, Anadolu University, Turkey

Abstract

With the new course descriptions in Computer Teaching programs in Turkey's Higher Education System, Computer Engineering seems to be embedding teaching skills. Within this framework I would like to discuss the following issues;

Why are the programs becoming similar?

Who is going to be what?

Is it the digital age force or teaching obsolescence?

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A live comparsion between unity and unreal game engines

Ramiz Musallam Salama, Near East University, North Cyprus

Mohamed ElSayed, Near East University, North Cyprus

Abstract

Game Engines is an ongoing thread that helps us in making and designing beautiful games with the simplest methods and least resources. Game Engines support a wide variety of playing platforms that can translate the game designed into a playable game in different platforms like: PlayStation, PC, Xbox, Android, IOS, Nintendo, etc. There a wide variety of game engines that suits every programmer and designer to work on such as: Unity Game Engine, Unreal Game Engine. So in order to make a game you have to learn how to code in one of these engines or you can just try to drag and drop. This research is an overview study in which the final result is a wide view on comparing Unity game engine and Unreal game engine. In Unity Game Engine we have the following headlines:

- Overview.
- Supported Platforms.
- History.
- Marketing.

As for Unreal Game Engine we have the following:

- History which has:

    1. Unreal Engine 1.
    2. Unreal Engine 2.
    3. Unreal Engine 3.
    4. Unreal Engine 4.

- Unreal Development Kit.
- Unreal Script.
- Reception.

In the end we have the results of each game engine so any developer can choose between the engines as close as it suites the developer to deliver maximum output with the least resources.

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Learning programming languages by using e-learning technology

Ramiz Musallam Salama, Near East University, North Cyprus

Mohamed ElSayed, Near East University, North Cyprus

Muhammed Abu Shadi, Near East University, North Cyprus

Abstract

Nowadays gaining new skills needs to be easily accessed and available. LMS which stands for Learning Management System gives you the ability to create, discover, and track courses anywhere with any device. In the past, strong softwares for handling complex databases have cooperated with digital platforms to manage and handle the curriculum of the courses and evaluation tools. Our program delivers content courses and offers opportunities to make students interact to it in a different multiple ways.

Features of Online Learning Programming System:

- It's a safe closed network that doesn't have to include a lot of personal information in the profile of a student.
- It's free to register and start learning.
- Students and Teachers alike can share different kind of media.
- Students can engage with each other in online discussions.
- Teachers can widen their Personal Learning Network.
- It's a friendly platform to the environment.
- Students have real peer-reviews for their work along the course.
- A calendar that keeps everything tidy and organized for both teachers and students.
- Students can interact with each others even if they are in different schools, states, or even countries.
- Teachers can give specific instructions to one student or specific group of students.
- Simple and easy to use platform.
- It provides portability and E-Learning world standards.

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An advanced Dissemination Emergency Message Scheme Based on Vehicles Speed and Traffic Densities

Mustafa Banikhalaf, Yarmouk University

Abstract

In intelligent transportation systems, broadcasting Warning Messages (WMs) by Vehicular Ad hoc Network (VANETs) communication is a significant task. Hence, how to design efficient dissemination schemes that can deliver WM fast and reliable, is still an open research question. Hence, in this paper we propose a broadcast scheme namely Advance Speed and Density Probabilistic Flooding Scheme (ASDPF), to meet design objectives in achieving high saved rebroadcast and reachability, and low end-to-end latency of WM delivery. The ASDPF uses vehicle speeds and vehicles density degrees to help emergency vehicles to send WM according to a road condition, adaptively. simulation results demonstrate the effectiveness and superiority of the ASDPF over its counterparts.

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Is Efficiency of Solar Photovoltaic Panels Improved by Using A Chemical Solution?

Hamed M. Suliman, Ankara Yildirim Beyazit University

Abstract

Today, the solar energy is used widely in water boiling-heating and electricity generation. the sun can generate electric power cleanly and economically. Since solar energy is environment friendly. In other words, solar energy does not produce carbon dioxide, which is harmful gas and results in increasing of the earth's temperature besides the decreasing of ozone layer. Solar energy is among the cheapest alternatives currently. The costs of residential solar panel systems have declined since 2009.However, the costs were leveling off in 2017. In this paper, we paint two Mono-crystalline solar cells with invisible shield pro 15 solution, which is anti-dust solution While two other solar cells are not painted. We compare the characteristics of the four different solar PVS. We measure the current, the voltage and the electric power that are generated by these four different photovoltaic panels. Furthermore, we look for the maximum current, the maximum voltage and the maximum electric power that are generated by these four photovoltaic panels.

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Optimizing distance measure between phrase F0 contours on the basis of perception tests of human listeners

Gailius Raškinis, Vytautas Magnus University

Abstract

Having an objective distance measure that approximates intonation similarity as perceived by humans is important for many applications, e.g. for assessing quality of synthesized vs. natural speech, for recognizing speaker identity and emotional state, and for data-driven intonation research that heavily relies on speech clustering. This paper addresses the very general and hard case of the intonation similarity problem: the utterances may have different lexical contents, different numbers of pitch accents, and different durations. The approach proposed in this paper consists of defining a distance measure between two phrases as a product of two components: a segment-level distance component and a phrase-level distance component. Both components are made dependent on a number of free/tunable parameters. They are optimized independently on the training data extracted from the human listening experiments. Segment level distance component takes phrase as a sequence of syllables and thus captures phrase dynamics. It is optimized by tuning syllable tilt feature weights using a random restart hill climbing search technique. Phrase-level distance component transforms phrase into a vector of supra-segmental features. This component is realized as a multilayer neural network and is optimized via error backpropagation technique. Experimental investigations were performed on a 10-hour Lithuanian speech corpus. Following human listening experiments, a training data set containing over 40 000 similar/dissimilar utterance pairs was extracted. Experimental investigations confirmed that the optimized distance measure outperformed the initial ad-hoc distance measure by an order of magnitude. The proposed approach is language-independent given that the training data for any particular language is collected and formatted in an appropriate way.

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