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Abstract Book

10th Global webinar on Applied science engineering and technology

July 03-04 2024

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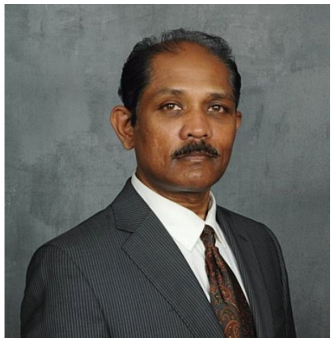
Upcoming Events-2024

12th Global Webinar on Traditional and Integrative Medicine	*July 10-11, 2024*
11th Global Webinar on Forensic Science	*July 17-18, 2024*
10th Global Webinar on Materials Science and Engineering	*August 01-02, 2024*
3rd Global Webinar on Neuroscience and Brain Disorders	*August 13-14, 2024*
10th Global Webinar on Public Health	*August 21-22, 2024*
8th Global Webinar on 3D Printing and Additive Manufacturing	*August 28-29, 2024*
2nd Global Online Conference on Artificial Intelligence, Machine Learning And Data Science	*October 03-04, 2024*
6th Global Webinar on Laser, Optics, and Photonics	*October 09-10, 2024*
5th Edition of Global Webinar on Nanotechnology and Nanoscience	*November 06-07, 2024*



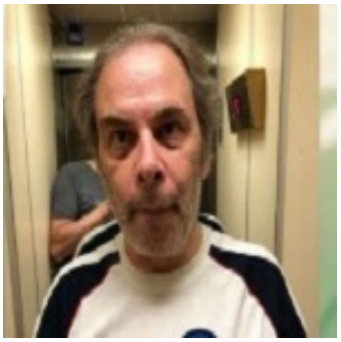
Charles Antony Bhaskaran
Navico Group, Brunswick Corporation
USA

Noise, Vibration & Harshness Analysis, Simulation, Testing and Validation of Marine Systems

Noise performance on marine systems, subsystems and components are studied. Various sound quality engineering of marine products are reported. Damaged propellers, bent shafts, gear wear, un-balance, alignment, vibration affects sound quality so solutions to increase anti vibration, noise reduction techniques are discussed. Vibration, shock performance of various marine power, fishing and digital systems in Bow, Helm, Stern and Roof mounted marine systems are studied. Performance degradation due to vibration, fatigue failure and quality are reported. Solutions to reduce vibration and increasing fatigue life are discussed. Computer Aided Engineering simulation techniques such as modal analysis, spectrum analysis, random vibration, harmonic, transient dynamics, shock, fatigue methodologies are used for optimization of marine designs to reduce vibration. Validation methodologies for various durability behavior using multiple techniques such as servo hydraulics, electro dynamics, 6 axis MAST Hexapod, drop test, sled strike techniques compared to proving grounds and field validation such as On-water, towing, trailer vehicle validation is researched.

Biography:

Charles Bhaskaran completed his MBA from Michigan State University, MS in Mechanical Engineering from Western Michigan University, Michigan USA. He has been working as a Technical Specialist at Brunswick Corporation since 2018, Engineering Specialist at EATON Corporation, Gardner Denver Inc., ODL Inc. and Ferroglobe PLC corporations over the past 30years. He has published more than 45 technical papers/ reports in reputed journals / corporate technical reports and is Managing Simulation, Prototyping, Lab testing and Proving Grounds Field Testing teams of the Brunswick Corporation Navico Group Simulation Development &Validation Center of Excellence at Lowell Technical Center in Lowell, Michigan, USA.



Dr. Glenn Tony Manuel Barrera
Barrera Science Lab
Sweden

"Atoms and particles"

A Universal model for the Calculation of Atoms and Particles

We present a Universal model for the effective calculation of elementary particles the model can handle any particle, atom,.. e.t.c,.. The fundamentals of the method is that everything here is constructed by a positional system exponential function of quark mass. Since it is a positional system we can describe any number or so called restmass. By ordering the quark restmasses in an positional system; “list” or sequence , of mass values , we can retrieve values from the quarks wich can be added , multiplied or exponentiated freely , particle compositions. We can make prediction , artificial prediction, set up any particle as well as hypothetic particles and then test for properties. Through versatility of the Universal particle system , we have then set up a particle language, particles are here written as formulas and equations or also if needed or wanted as numbers. The language can be freely designed , in the sense and every sense a programming language or an ordinary “verbal” – based language, by defining particles in words that we predefine. We can therefore set up constant equations for describing the rest mass of a particle even though experimental results introduce new restmass weighting values, the formulas are here invariants, deduced from algebraic composition. We present the Universal Particle Language.

Biography:

Tony Barrera is a certified autodidact math genius. He have published more than 42 Ordinary high rated scientific papers And up to several hundred publications ,computer simulations and animations In different subjects, scientific papers in mathematics , computer graphics, numerical analysis, astrophysics and Particle Atomic physics. Tony does research general together with prof Ewert Bengtsson, Prof Anders Hast and Physicist Bo Thelin and the crew of Barrera Science Lab. Tony Barrera have been working for the company AB Consonant with implementation of the Fast Fourier Transform, FFT , and as a computergrahics researcher at Cycore AB (Webbgraphics). Constructor of about 10 - 20 different Graphics Engines , Assembler ,Basic, Pascal and/or C++ computer languages. Started with mahematics and science at age 3, got the first Astronomy book (from mother Elisabeth Mercadal) at 9, the first Chemistry set at 10 , Chief (head) of Barrera Science Lab.

Dr. Chris McGinty
Skywise Cloud
USA

The Infinite Well: Zero Point Energy and Its Revolutionary Promise

Addressing the Technical Challenges

Ultra-Precise Measurements

The MEQ, being a comprehensive mathematical framework for quantifying ZPE, provides a structured approach to model the quantum fluctuations within the vacuum. This framework allows researchers to predict the expected magnitude of ZPE-related effects, guiding the design of experiments with a focus on the most significant phenomena. By providing a clear theoretical foundation, the MEQ aids in devising experimental setups that maximize precision.

Energy Conversion Efficiency

The MEQ offers insights into the energy density and fluctuations within the quantum vacuum. By understanding the underlying physics, researchers can develop more efficient energy conversion mechanisms that take advantage of specific ZPE-related phenomena. The MEQ's mathematical descriptions of ZPE fluctuations aid in optimizing energy conversion processes to minimize losses.

Thermal Noise Mitigation

MEQ-derived predictions can help distinguish ZPE-related signals from thermal noise. By modeling the expected ZPE effects under different conditions, researchers can develop noise reduction techniques that enhance the signal-to-noise ratio in ZPE experiments. This ensures that ZPE-related phenomena are detected accurately.

Experimental Reproducibility

The MEQ provides a standardized framework for calculating and predicting ZPE-relat-

ed effects. Researchers can use the MEQ to design experiments with well-defined parameters, making it easier to reproduce results across different laboratories. The MEQ's mathematical rigor ensures consistency in experimental setups and measurements.

Addressing the Theoretical Constraints

Quantum Mechanical Uncertainties

While quantum mechanics introduces uncertainties, the MEQ provides a systematic and mathematically rigorous approach to quantifying these uncertainties within the context of ZPE. Researchers can use the MEQ to account for quantum uncertainties and assess their impact on ZPE-related predictions, allowing for more accurate theoretical modeling and regulation of Heisenberg's Uncertainty Principle.

Complex Quantum Vacuum Dynamics

The MEQ offers a structured description of quantum vacuum dynamics, making it easier to comprehend the intricate fluctuations and interactions within the vacuum. Researchers can use the MEQ's mathematical formalism to explore and analyze these dynamics in a more organized and systematic manner.

Theoretical Boundaries

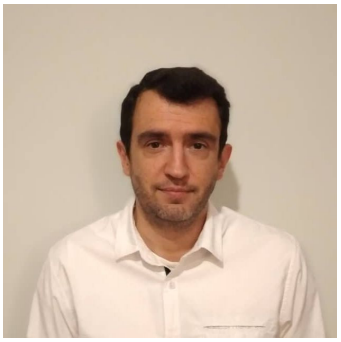
The MEQ itself represents a pioneering effort in advancing the theoretical understanding of ZPE. By pushing the boundaries of current theoretical frameworks, the MEQ opens new avenues for exploring the quantum vacuum's properties and behaviors. Researchers can build upon the MEQ to develop novel mathematical frameworks that address previously uncharted aspects of ZPE.

Interplay with Quantum Field Theory

ZPE extraction inherently involves the interplay between quantum field theory (QFT) and practical applications. The MEQ bridges the gap between these two domains by providing a quantitative link between the quantum vacuum's properties, as described by QFT, and the potential for energy extraction. This facilitates a more seamless integration of theoretical principles with practical ZPE technology development..

Biography:

Chris McGinty is a visionary entrepreneur who has revolutionized theoretical physics and artificial intelligence. With an unquenchable thirst for understanding the universe, Chris embarked on a quest to develop a unified framework that could transform our knowledge of nature. Through extensive research, he introduced the MEQ, an extraordinary unified equation bridging quantum physics and field theory. As the founder of the L_TOE (Lagrangian Theory of Everything) framework, Chris assembled a brilliant team and harnessed cutting-edge AI technologies to explore the intricacies of the MEQ. This endeavor birthed Skywise.ai, an innovative platform uniting quantum-inspired algorithms, computational resources, and simulation tools to advance various domains. Chris's unwavering pursuit of knowledge and commitment to pushing scientific boundaries have cemented his status as a pioneering figure. His work lays the groundwork for quantum computing, artificial intelligence, and our comprehension of the universe's fundamental laws. Through interdisciplinary collaboration, Chris inspires future generations, leaving an enduring impact on scientific progress.



Prof. Raul D.S.G. Campilho

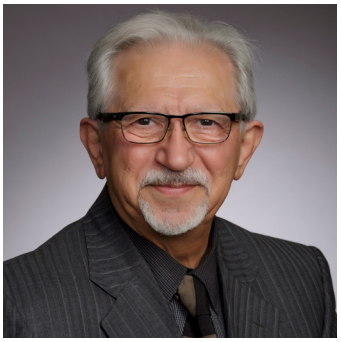
Permanent Auxiliar Professor, School of Engineering Instituto Superior de Engenharia do Porto (ISEP), Portugal

Impact analysis of advanced composite structures by numerical modelling techniques

Numerical modelling of dynamic loadings in composites and sandwich structures is seldom addressed in the literature. Additionally, sandwich structures also find application in different industries which, thanks to the inclusion of a low apparent density core, manage to achieve good mechanical properties in bending (increasing the second moment of area) with a low weight compromise. However, this type of material poses additional challenges due to its heterogeneous nature, generally due to stacking, resulting in complex damage mechanisms and the necessity to use failure criteria especially formulated for the evaluation and design of composite structure. This work initially evaluates the effect of the overlap length (LO) and adhesive type on the strength of composite single-lap joints (SLJ), when impact loaded, through experimental tests and cohesive zone models (CZM). It was concluded that the increase of LO increases the joint strength, especially in those with a more flexible adhesive. In a second stage, a solution is proposed that drastically reduce the lack of residual strength of composite materials, i.e., after initial impact, by combining laminates of hybrid carbon fiber/Dyneema® fabrics with an elastomeric adhesive Reverlink™, in a composite sandwich with a honeycomb core. Low and high-velocity impact tests were made, and the experimental results were compared with a CZM-based numerical predictive model, showing the improved residual strength capacity of the proposed solution, compared to using typical epoxy adhesives.

Biography:

Raul Duarte Salgueiral Gomes Campilho has a PhD in Mechanical Engineering (2009) and a Habilitation in Mechanical Engineering, both from the Faculty of Engineering of the University of Porto (Portugal). He is an auxiliary professor of the Mechanical Engineering department of ISEP – School of Engineering, Polytechnic University of Porto (Portugal), where he teaches several courses of the Bachelor and Master degree in Mechanical Engineering. Since 2023 he is the vice-director of CIDEM – Centre for Research & Development in Mechanical Engineering. His research mainly focuses on adhesive joints; structural adhesives; design of bonded joints; experimental testing; Finite Element Method; Extended Finite Element Method; Meshless Methods; Cohesive Zone Models; composite materials; numerical modelling of composite materials; micromechanics; macromechanics; design of mechanical structures; flexible production; automation; robotics; and actuator systems. His publication record contains 340 articles.



Dr. Aliakbar Montazer Haghighi
Prairie View A&M University, Texas
USA

Time-Dependent Conveyor Transportation in Tandem with Parallel Multi-Servers, as well as Batch Service with Various Sizes

Two time-dependent conveyor models are considered and analyzed in this paper. There are two stages for a conveyor to travel to and receive service by a multi-server in parallel. An arriving conveyor may balk and not attend for various reasons. The contents of an attendee conveyor will be placed randomly in an infinite size buffer. After waiting a while in the first station, an item may renege due to a long wait or other reasons before starting its service. After being served, an item from the first station will have three choices, one of which is to leave, another is to feedback through an auxiliary station after being groped by others to the first buffer for further service and the third option is to move to attend a buffer to group and move to the second station. Items of the conveyors attending the second station will also be in an infinite buffer, will be served in a multi-server service station, and will leave after completion of its service. The goals are to find distributions of queue sizes and their moments.

Biography:

Dr. Aliakbar Montazer Haghighi, Professor and former Head of the Mathematics Department, Prairie View A&M University. Ph.D. in Probability and Statistics from Case Western Reserve University, the late Emeritus Professor Lajos Takács his supercisor; both his BA and MA in Mathematics from San Francisco State University, California, USA. He has decades of experience, ranging from academic research and teaching to academic administration at a variety of universities around the world. His research publications, in probability, statistics, stochastic processes and queueing theory, are extensive. He is a life-time member of AMS, and SIAM. He is the Co-Founder (2004) and former Editor-in-Chief (2006-2021) of Application and Applied Mathematics: An International Journal (AAM).

Prof. Pralay Kumar Karmakar
Tezpur University
India

Solar Plasma Equilibrium And Fluctuation Dynamics: A Brief Meta-Analytic Overview

The plasma dynamics of the self-gravitationally bounded Sun (solar interior, fireball) and its circumambient complex unbounded atmosphere (solar exterior, wind) is meta-analytically reviewed and critically analyzed. The explorations of the solar model evolution from the Standard Solar Model (SSM [1-2]) to the Gravito-Electrostatic Sheath (GES [3-6]) model predictions of the entire solar plasma system are highlighted briefly. Recent qualitative and comparative scenarios founded on these two distinct classes of solar plasma models are examined. In this context, a synoptic view of the recently reported research reports studying the solar plasma consequences, on both equilibrium and fluctuation, founded on both the SSM and GES model frameworks is presented here. Diversified features of solar equilibrium plasma dynamics modified with a self-gravitational potential barrier are outlined [3-5]. Besides, different relevant solar parameters which play as stabilizing (or destabilizing) and accelerating (or decelerating) factors influencing the collective fluctuation dynamics of the entire solar plasma system, are summarily portrayed [5-7]. The key aim of this explorative review is to present an overview of the main up-to-date investigations based on the GES-based solar plasma equilibrium and fluctuation dynamics against the SSM counterparts extensively. Moreover, the validation of the GES-based solar plasma model predictions is justifiably bolstered by several in situ solar observational data [2, 4, 6-7]. The key applicability of this meta-analytic review in solving some major long-standing solar plasma problems, thereby paving the way for futuristic investigations in the established GES-based solar plasma direction, is conclusively indicated.

Biography:

Prof. Pralay Kumar Karmakar has completed his PhD from Centre of Plasma Physics – Institute for Plasma Research (CPP-IPR), Guwahati, India, under Gauhati University, Assam, India. He has joined Tezpur University as Assistant Professor in the Department of Physics, Tezpur University, Tezpur, India. He has, since then, been widely interested in diversified research and teaching areas, such as Astrophysical plasmas, Cosmic fluid dynamics, Stability analyses of complex media, Nonlinear wave dynamics, Structure formation, Plasma-wall interaction, Gravito-electrostatic sheath, Physics of complex plasmas, Nonlinear plasma theory, Advanced electrodynamics, and so forth. He has successfully completed several awarded research projects, sponsored by Government of India, such as DST, SERB, UGC, etc. He is in the editorial and review board of a number of prestigious international refereed journals. A noteworthy number of active reviewer certificates of honour have been awarded to him. He has good impactful publications in reputed peer-reviewed journals (# 111), book chapters (# 15), proceedings (# 25), etc. He has acted as an invited speaker, keynote speaker, and plenary speaker in a reasonable number of scientific programs both in India and abroad. He has guided a sensibly good number of Research Scholars for PhD, Project Students for Masters, and Interns for Bachelors. He has recently received an award of IUCAA Associateship for executing supported research works in Astronomy in the duration of 2023-26. He is actively associated with several national and international scientific societies of high repute towards promoting science, technology, and academic expansion for mankind globally; and so forth.

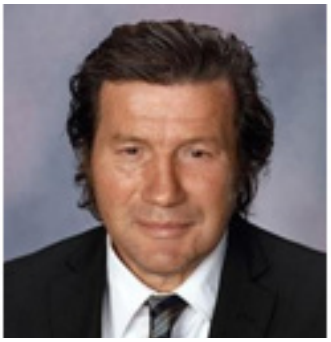
Mr. Suresh Aluvihara
University of Peradeniya
Sri Lanka

Improved examination of clay samples from Sri Lankan roof tiles to assess their potential for various industrial uses

The roofing tile industry thrives in various regions of Sri Lanka due to the abundant availability of diverse clay types found in numerous specific locations across the country. Despite the primary utilization of these clays in traditional industries like pottery, brick making, and roofing tile manufacturing, their potential for advanced scientific and technological purposes remains largely untapped. The primary objective of the current study was to conduct a detailed chemical analysis and characterization of a specific type of clay used for roofing tiles. Clay samples were collected from the Dankotuwa area, known for its abundant deposits of finer-grained clays ideal for the roofing tile industry. The collected clay samples underwent chemical analysis using advanced analytical techniques such as X-ray diffraction (XRD) spectrometry, X-ray fluorescence (XRF) spectrometry, Fourier transform infrared (FT-IR) spectrometry, and Scanning Electron Microscopy (SEM). The results revealed the presence of major elements like Fe, Zr, Ba, Ti, and K, as well as minerals such as kaolinite, quartz, glauconite, muscovite, and marcasite. Kaolinite, glauconite, and marcasite were identified as robust adsorbents for specific compounds like heavy metals, radioactive elements, pathogens, and certain ferrous minerals showcased potential catalytic activity in chemical reactions when combined with solid compounds like activated carbon. Consequently, it is proposed that these clays could be further developed and optimized for applications in wastewater treatment and catalytic processes as support materials in various forms, including bulk materials, composite materials, or nanostructures.

Biography:

Mr. Suresh Aluvihara completed his postgraduate studies in 2023 at the University of Peradeniya in Sri Lanka. His research covered Environmental Engineering, Material Engineering, Water Treatments, Pollution Control Engineering, and Chemical Engineering. Before that, he earned his undergraduate degree in 2017 from a government university in Sri Lanka, focusing on Earth Science. Mr. Aluvihara has authored more than 75 publications in respected journals, conferences, and workshops. He has participated in international research conferences in various roles. Currently, he works as a researcher in Agricultural Soil Science and is also an editor and reviewer for research journals. He is leading research projects in Earth Engineering, Chemical Engineering, and Water Engineering. Mr. Aluvihara has received awards as a promising young scholar and scientist and has opportunities to participate in international conferences and workshops.



Prof. Dr. Eduard Babulak
National Science Foundation
USA

The Third Millennium Computational Mechatronics

Given the current dynamic developments in the field of Semiconductors, Very Large Scale Integration, New Materials, AI, Smart Medicine, and Humanoid Robotics, with the ubiquitous access to high-speed Internet 24/7, the Ultra-smart Cyberspace is becoming reality. The Smart Computational Systems are collecting, processing and analyzing a real-time medical data utilizing the Electronic Health Record (EHR) to fast treatment, prevention and healing of the wave of new viruses and diseases and ultimately safe human lives. The areas of research in the field of Microelectronics, Computing and AI & Humanoid Robotics create a new platform for future e-Health utilizing new biomechanical humanoid devices. In light of currently ongoing developments of Covid-19 crisis, having effective real-time application of Ultra-smart Cyberspace, with applied AI & Robotics and Big Data will support critical live saving surgeries in Next generation tele-Medicine. Due to Covid-19, the humanity lives in the most dramatic times, yet despite of its most negative impact it does also inspire dynamic innovation, research and developments in the world of health, business, government, industry, plus., while promoting seamless creation of multidisciplinary teams of experts in the nation and worldwide. The author discuss the current and future dynamic trends in research, innovation and developments of Computational Mechatronics, Electronics, Semiconductor & VLSI, New Materials, AI, Smart Health, and cuttingedge Humanoid Robotics that would provide support to save lives and to make best real-time decisions worldwide.

Biography:

Professor Dr. Eduard Babulak is accomplished international scholar, researcher, consultant, educator, professional engineer and polyglot, with more than thirty years of experience. He served as successfully published and his research was cited by scholars all over the world. He serves as Chair of the IEEE Vancouver Ethics, Professional and Conference Committee. He was Invited Speaker at Oxford, Tokyo, the University of Cambridge, MIT, Purdue Speaker Photo University, Yokohama National University and University of Electro Communications in Tokyo, Japan, Shanghai Jiao Tong University, Sungkyunkwan University in Korea, Penn State in USA, Czech Technical University in Prague, University at West Indies, Graz University of Technology, Austria, and other prestigious academic institutions worldwide. His academic and engineering work was recognized internationally by the Engineering Council in UK, the European Federation of Engineers and credited by the Ontario Society of Professional Engineers and APEG in British Columbia in Canada. He was awarded higher post-doctoral degree DOCENT – Doctor of Science (D.Sc.) in the Czech Republic, Ph.D., M.Sc., and High National Certificate (HNC) diplomas in the United Kingdom, as well as, the M.Sc., and B.Sc. diplomas in Electrical Engineering Slovakia. He serves as the Editor-in-Chief, Associate Editor-in-Chief, Co- Editor, and Guest-Editor. He speaks 16 languages and his biography was cited in the Cambridge Blue Book, Cambridge Index of Biographies, Stanford Who's Who, and number of issues of Who's Who in the World and America

Dr Orestis Denis Valianatos
Global President and CEO, ATMOS Global Pty Ltd (ATMOS Global™), Australia

ATMOS Global's Inspirational Foresight Leadership strategy formulation framework: capitalising on vertical AI's transformational potential to build a culture of perpetual reinvention and human potential optimisation

Vertical AI brings the opportunity to increase domain specific value creation through targeted personalisation and greater engagement. ATMOS Global's Inspirational Foresight Leadership strategy development framework is the first of its kind in the world. It designs adaptive and flexible strategies that can predict, identify and respond to rapidly evolving business landscape challenges and opportunities through ongoing adjustments by building a culture where continuous change, adaptation and improvement are actively pursued to maintain the organisations' relevance, success and expansion in the marketplace. ATMOS Global's Inspirational Foresight Leadership strategy development framework rewrites the genetic code of leadership using Next-Gen artificial intelligence redefining leadership from a deep extended future time perspective, achieving a high level of cognitive complexity of multi-objective optimisation and overcoming cognitive entrenchment.

Biography:

Dr Orestis D. Valianatos is the Global President and CEO of ATMOS Global Pty Ltd (ATMOS Global ™), a highly accredited and accomplished professional company director, an astute investor in the capital markets, an established innovator, a role model, a visionary thinker with a diverse portfolio of formal qualifications (BSc, MSc, PhD in Atmospheric Physics, Climate & Sustainability, Master of Business Administration, Professional Doctorate in International Business and Sustainability, Corporate Governance training as a Professional Board Director, and soon a Diploma of Finance), experience, unique insight and influential global perspective across multiple domains including artificial intellignce, leadership, strategy and innovation, sustainability, ESG, climate-tech, thematic and sustainable investing. Entrepreneur and agent of change, he has authored more than 50 ground-breaking international research papers as a subject matter expert working in partnership with senior personnel from government departments, universities and major private clients from the mining, manufacturing and energy & utilities sectors.

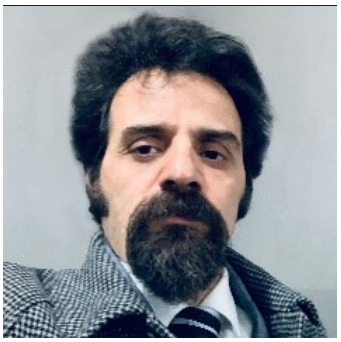
Prof. J.C. Umavathi
Gulbarga University
India

Diversified characteristic of the dissipative heat on the radiative micropolar hybrid nanofluid

Analysis of the Falkner-Skan flow of micropolar hybrid nanofluid through a wedge surface is the major focus of the current communication. Precisely, the proposed study focuses on the behavior of thermal radiation and dissipative heat on the aqueous solution of hybridized nanoparticles. The Rosseland's diffusion model has been applied for simulating uni-directional radiative transfer for optically dense fluids. In this study the nanoparticles of Cu and TiO2 have mixed with water to get Cu-TiO2/water hybrid nanofluid. Here, the controlling flow phenomena presented via partial differential equations are obtained by using Naiver-Stokes theory and then converted into a set of ordinary differentiation equations with the suitable choice of the similarity technique. Further, the set of equations are handled numerically employing three-stage Lobatto IIIA technique the computation is carried out by using the built-in code bvp5c in-build in MATLAB software. Through graphs and tables, the effects of different characterizing parameters on the flow profiles are interpreted briefly. The outcomes for the coefficient of wall friction and Nusselt number are inspected via tables. A comparative analysis has also conducted in this work and found an acceptable agreement amongst previous and current results. The present findings manifest that increasing material parameter decrease the fluid velocity because micropolar nanofluids have drag-reducing characteristics that affects fluid motion and raises temperature, whereas increasing thermal radiation and Eckert number slows down heat transfer rate but improves temperature profiles significantly.

Biography:

Prof. J.C. Umavathi completed her Post Doctral from the Department of Engineering, University of Sannio, Piazza Roma 21, 82100 Benevento, Italy. She is working as Professor in the Department of mathematics, Gulbarga University since 1993. She has published more than 215 research articles in reputed international journals. She is a recipient of Kalpana Chawla Young Scientist award, Sir J.C. Bose award and Erasmus Mundus Fellowship.



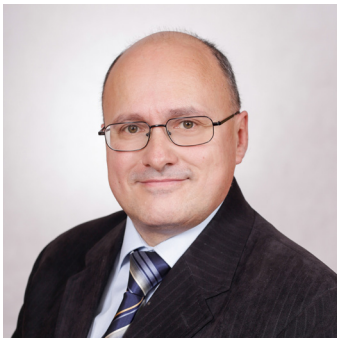
Prof. Hoshang Kolivand
Liverpool John Moores University
United Kingdom

Breaking Boundaries with AI: Current and Future of Mixed Reality

In this talk, we delve into the profound impact of AI on Mixed Reality, uncovering the latest advancements and groundbreaking innovations that are breaking the boundaries of digital experiences. From sophisticated real-time simulations to personalized virtual environments, explore how AI's integration with Mixed Reality is driving unprecedented immersion and transforming the way we perceive and interact with the virtual world. Join us as we unravel the limitless possibilities and implications of this transformative fusion.

Biography:

Hoshang Kolivand is an Assoc. Prof in AI and Mixed Reality at Liverpool John Moores University (LJMU). With an MSc degree in Applied Mathematics and Computer Science, a PhD and a Postdoc in Augmented Reality, he is a leading expert in these fields. As the Head of the Applied Computing Research Group at LJMU, Dr. Kolivand leads a team of over 35 researchers, focusing on AI and Augmented Reality. He has published extensively with over 190 papers in international journals and has presented at numerous conferences. Dr. Kolivand is a Senior Member of the IEEE and has served as a keynote speaker at more than 55 international conferences. He has organized over 30 conferences in AR, VR, AI, and HCI. In addition to his academic contributions, Dr. Kolivand has authored book chapters and several products which received over 14 awards for his work in Virtual Reality and Augmented Reality. As a dedicated researcher and educator, Dr. Hoshang Kolivand plays a significant role in advancing AI and Mixed Reality technologies, making valuable contributions to the field through his expertise and leadership.



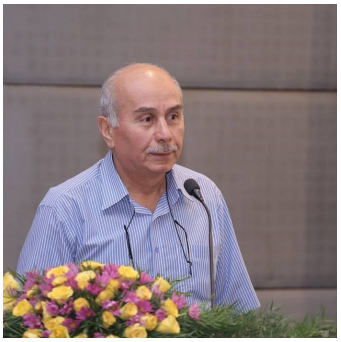
Dr. Tomasz Krystofiak
Poznan University of Life Sciences
Poland

Progress in gluing and finishing technologies in the woodworking industry

In line with current procedures and requirements, woodworking companies are modernizing and introducing innovative technologies. In the field of gluing and finishing, this involves the use of eco-friendly products (solvent-free or with reduced volatile content), the addition of bio-components to formulations and the introduction of energy-saving radiant heaters for the curing of adhesives and varnish products.Eco-friendly measures also involve reducing the application of adhesives and varnish products. It is also possible to use materials with a functional layer instead of classic adhesives or to use products with 100% solids content.Other possibilities include replacing 'wet technologies' with - "dry technologies".The workers of the Laboratory of Gluing and Finishing of Surface at Poznan University of Life Sciences has been dealing with this issue for many years. Innovative solutions will be presented concerning publications, patents and research carried out in cooperation with scientists from other research centres.

Biography:

Dr. Tomasz Krystofiak in 1994 was finished study of Faculty of Wood Technology at Agriculture Academy in Poznan. In 2002 he prepared a PhD dissertation and in 2019 habilitation. Author or co-author of more than 300 scientific publications in the scope of gluing and finishing of wood and wood based composites. To his research activities belongs surface phenomena, wettability, adhesion and adherence, modification, gluability and paintability of lignocellulosic materials. He was a Management Committee Member of COST Actions FP1006 and CA15216 and Working Group Member (FP1303 and FP1407). Since 2021 Guest Editor in 6 Special Issues in Coatings, Forests, Materials journals.



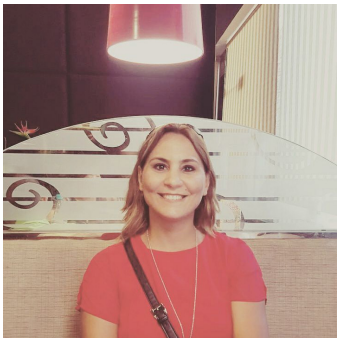
Prof. Kartlos Joseph Kachiashvili
Georgian Technical University
Georgia

Artificial intelligence methods for recognizing human emotion

The results of the investigation of the problem of the automatic decision about emotional condition of a person on the basis of multivariate time series (MTS) datasets obtained by electroencephalography (EEG)-based Brain Computer Interfaces (BCI) devices is considered in the presentation. For this purpose, different algorithms such as Euclidean Distance (ED), Dynamic Time Warping (DTW), Weighted Sum Singular Value Decomposition (WSSVD), Eros (Extended Frobenius norm), Generalized variance, PCA similarity factor (SPCA) and Testing the Equality of Mean Functions (TEMF) are examined. The proposed algorithms have been tested using statistical simulation and real data which fully confirmed the correctness of theoretical reasoning and the ability to make decisions with the required reliability at the automatic diagnosis and to recommend more reliable algorithms at recognition of the emotional condition using artificial intelligence.

Biography:

Professor of Georgian Technical University, Faculty of Informatics and Control Systems. He is a Member (Academician) of Georgian National Academy of Science. He also is Senior Scientific Worker of the I. Vekua Institute of Applied Mathematics of the Tbilisi State University (Tbilisi, Georgia) and Main Scientific Worker of Muskhelishvili Institute of Computational Mathematics. He was working in many scientific research institutes and universities in Georgia, Russia and Pakistan on the positions: engineer, scientific worker, Head of Laboratory, Head of Department, Head of National Center, Professor, Rector of Institute. He has 252 scientific works published in various esteemed reputable International Journals. He is a Member of Various (30) Professional Bodies and Editorial Boards of international scientific journals. He published seven monographs and five text-books in Georgia, Ukraine, USA and Indonesia. He has received many prestigious awards and rewards. His research interests are: Mathematical Statistics, Data Analysis (Environmental, Agricultural, Medical), Mathematical Modeling and Simulation, New Computer Technologies Development, System Analysis (Environmental Water Pollution Control Systems), Computing Mathematics.



Farah JEMILI
University of Sousse
Tunisia

Artificial Intelligence for Cyber Security Applications

The recent report from the White House underscores the significance of Artificial intelligence (AI) and emphasizes the need for a well-defined roadmap and investment in this field. As AI transcends the realm of science fiction and takes center stage as a transformative technology, there is an immediate imperative to systematically develop and implement AI to witness its tangible impact across diverse fields of study.This presentation makes a valuable contribution to the utilization of AI in cybersecurity applications. While intrusion detection has been extensively studied in both industry and academia, cybersecurity analysts still seek enhanced accuracy and a comprehensive threat analysis to effectively safeguard their systems in the cyberspace. To achieve improvements in intrusion detection, a more comprehensive approach is recommended, involving the monitoring of security events from heterogeneous sources. By merging security events from diverse sources and leveraging data-driven learning, a more holistic perspective and a deeper understanding of the cyber threat landscape can be attained. However, a challenge arises when dealing with the sheer volume of data, as even a single event source faces significant big data challenges when considered in isolation. Incorporating more heterogeneous data sources poses even greater difficulties. Fortunately, the integration of AI and big data analysis can provide solutions to these challenges associated with heterogeneous data. The proposed approach encompasses data pre-processing and learning stages. The experimental results validate the effectiveness of this approach in terms of accuracy and detection rate, establishing that AI can indeed yield superior outcomes within the realm of cybersecurity.

Biography:

Farah JEMILI has completed her Ph.D. in 2010, from the National School of Computer Sciences (ENSI), Tunisia. Since 2010, she is an Assistant Professor at the Higher Institute of Computer Science and Telecom of Hammam Sousse (ISITCOM), Tunisia. She has been member of the Scientific Council of ISITCOM for 3 years (2011-2014), and Head of the Department of Computer Science at ISITCOM for 3 years (2017-2020). Her research interests include Artificial Intelligence, Cyber Security and Big Data Analysis. She has over 40 publications in reputed international journals and conferences and has presented many invited and contributed talks at international conferences.

Dr Basavarajaiah DM

Department of Statistics and Computer Science ,Karnataka Veterinary Animal and Fisheries Sciences University, Bidar, India

Statistical methods for life science research

In the 20th century, big data was a concept that was very common in all disciplines. With the growth of science and technology, we need high-performance statistical methods for solving real-world problems in biology. Biostatistics is the interdisciplinary subject and emerging science of biology, which can deal with many theoretical and practical postulates drawn up from many practical illustrations of life science, medical science, and clinical science, viz., evaluation of syndromic infection based on epidemiological attributes, early screening of systematic infections, development of disease biomarkers, accurate and timely pathogen detections, identification of mutant genes associated with drug resistance and prediction of drug susceptibility, and development of algorithms for mutant genes, which were developed in-house at Med genome and were updated periodically based on predictive modelling. Every research study precluded textual and non-textual datasets, which will be aroused by the in-house experiments. As per the technology concern, data simulation and optimisation play a significant role in interpreting massive data sets without any bias. Importantly, existing life science data sequences should be integrated with suitable statistical methods for effective inference about the study population. Hypothesis testing is very common in too many research problems. Nowadays, different fundamental statistical methods have been used for the assessment of biological redundancy and the multiplicity of different endogenous and exogenous variables. In the case of biostatistics, interdisciplinary science deals with genetic traits that were assessed by DNA or RNA sequences on similar structures, organisms with similar protein expressions, multiple functions of similar genes, a grouping of proteins based on different pathways, the intercorrelation between various types of contemporary biological variables, etc. In historical phenomena, the range of statistical analysis and the designs of experiment had many practical constraints for the induction of research studies, which will be considered different groups of dependent and independent variables and are directly accessible by real biological experiments. Fortunately, there are

many scientific teams working on problems related to the application of biostatistics worldwide. The literature survey on biostatistics (published articles or scientific evidence) shows too many analytical limitations because we are using long-ranging variables for the formulation of research design in complex statistical interventions, and we also developed new algorithms. It seems to be very complex, driven tools are unable to connect the research problems to the real problems of biology and biostatistics. In the realistic approach, we have cited an example, the development of algorithms for protein sequencing homology models in functional proteomics, where the sequences of each peptide have been formed into alpha () and beta () sheaths by different types of amino acids (AA), and each process of synthesis will take time quotient or retention time for binding of genetic codes, The frequency of repetitions of the amino acid threshold level is very important for the reorganisation of various loops in protein synthesis. Moreover, these newer postulates have not been formulated by biological scientists. In light of the above research gap at the global level, we are attempting to address these issues statistically through the development of a newer PSTVHM model (protein sequencing time variant homology model). These formulated models have explained the different components (explained and unexplained) of various protein sequences in biological pathways. In an overall conceptual scientific framework, we have assumed theoretical postulates for building the above model and also demonstrated protein sequencing data. Further, the latent hidden Markova random walk model was constructed from a machine learning approach, and artificial intelligence supervised and unsupervised learning was used for effective interpretations. The model was diagnostically tested with different sensitive tests by the Thompson iteration method.

Biography:

Dr. Basavarajaiah D.M working as an Associate Professor and Head , Department of Statistics and Computer Science, Dairy Science College, Karnataka Veterinary Animal and Fisheries Sciences University (B), Hebbal, Bangalore. My area of research heeds Statistical theory, Statistical modelling on high dimensional datasets of Agriculture, Engineering, Medicine, Veterinary and animal Sciences. Penned sixty eight research articles and five academic books. Serving as an editorial Board Member and Scientific Board advisor of Various International indexed journals. Life Member of various academic organizations. Honoured several accolades for my academic and research Excellency “Chartered Scientist award stalwart by Science Council, United Kingdom in Collaboration with Royal Statistical Society. Best Reviewer award -2016 ‘TRANS STELLAR’ Journal Publications and Research Consultancy ,TJPRC Ltd., (NAAS rated Journals), Fellow of Royal Statistical Society ,UK (London), Fellow of Mathematical Society ,UK (London), Bharathshikshratana and Indo-Dubai Achiever’s Pacific award honoured by Global Society of health and educational growth new Delhi, Best reviewer -2015, Best scientific Board advisor - 2016 and Best editorial Board Member awards bestowed by International academy of Engineering Science and Technology (IASET),USA.

Prof. Dr. Sailesh Iyer
Dean at Rai University
India

AI Research Trends

Artificial Intelligence is emerging area of research with many use cases in all domains. Healthcare and Medical Imaging are inviting huge investment in Predictive and Diagnostic Analytics. According to Forbes, AI's use in healthcare will grow immensely, particularly when it comes to how doctors diagnose and treat patients with various ailments. Moreover, the use of machine learning is projected to rise within domains such as drug discovery and medical research. AI will become more integrated into everyday life, with the proliferation of smart homes, self-driving cars, and intelligent personal assistants. Computer Vision and Image Processing, AI and Robotics are tipped to change the traditional landscape of the world. My talk would cover the current and upcoming Research trends in Automation, Cyber Security, Data Management, NLP and various other domains. Artificial Intelligence can transform e-Governance resulting in Smart Cities and Smart Villages. Keywords: Smart Cities, Smart Villages, e-Governance, Machine Learning, Image Processing, Automation, Robotics.

Biography:

Prof. Dr. Sailesh Iyer has a Ph.D. (In computer Science) and currently serving as a Professor and Dean with Rai University, Ahmedabad. He has more than 22 years of experience in Academics, Industry, and Corporate Training out of which 18 years are in core Academics. He has Patents to his credit and is involved as an Editor for various book projects with IGI Global (USA), Taylor and Francis (UK) and Bentham Science (UAE). A hardcore Academician and Administrator, he has excelled in Corporate Training, Delivered Expert Talk in various AICTE sponsored STTPs, ATAL FDPs, Reputed Universities, Government organized Workshops, Orientation, and Refresher Courses organized by HRDC, Gujarat University. Research Contributions include reputed Publications, Track Chair at ICDLAIR 2020 (Springer Italy), icSoftComp 2020, IEMIS 2020 (Springer), ICRITO 2020 (IEEE), ARISE-2021, FTSE-2021, and TPC members of various reputed International and National Conferences, Reviewer of International Journals like Multimedia Tools and Applications (Springer), Journal of Computer Science (Scopus Indexed), International Journal of Big Data Analytics in Healthcare (IGI Global), Journal of Renewable Energy and Environment, and Editor in various Journals. Expert Talk on Research-based topics in various Universities and Conferences in addition to guiding Research Scholars as supervisors. He has also been invited as a Judge for various events, Examiner for Reputed Universities, is a Computer Society of India Lifetime Member and also serving as Managing Committee (MC) Member, CSI Ahmedabad Chapter from 2018-2020.

Dr. Seongwoo Woo
Ethiopian Technical University
Ethiopia

Improving the Fatigue Design of Mechanical Systems such as Refrigerator

To enhance the lifetime of mechanical system such as automobile, new reliability methodology – parametric Accelerated Life Testing (ALT) – suggests to produce the reliability quantitative (RQ) specifications—mission cycle—for identifying the design defects and modifying them. It incorporates: (1) a parametric ALT plan formed on system BX lifetime that will be X percent of the cumulated failure, (2) a load examination for ALT, (3) a customized parametric ALTs with the design alternatives, and (4) an assessment if the system design(s) fulfil the objective BX lifetime. So, we suggest a BX life concept, life-stress (LS) model with a new effort idea, accelerated factor, and sample size equation. This new parametric ALT should help an engineer to discover the missing design parameters of the mechanical system influencing reliability in the design process. As the improper designs are experimentally identified, the mechanical system can recognize the reliability as computed by the growth in lifetime, LB, and the decrease in failure rate. Consequently, companies can escape recalls due to the product failures from the marketplace. As an experiment instance, two cases were investigated: 1) problematic reciprocating compressors in the French-door refrigerators returned from the marketplace and 2) the redesign of hinge kit system (HKS) in a domestic refrigerator. After a customized parametric ALT, the mechanical systems such as compressor and HKS with design alternatives were anticipated to fulfil the lifetime – B1 life 10 year.

Biography:

Dr Woo has a BS and MS in Mechanical Engineering, and he has obtained PhD in Mechanical Engineering from Texas A&M. He majors in energy system such as HVAC and its heat transfer, optimal design and control of refrigerator, reliability design of thermal components, and failure Analysis of thermal components in marketplace using the Non-destructive such as SEM & XRAY. In 1992.03–1997 he worked in Agency for Defense Development, Chinhae, South Korea, where he has researcher in charge of Development of Naval weapon System. He was working as a Senior Reliability Engineer in Refrigerator Division, Digital Appliance, SAMSUNG Electronics. Now he is working as associate professor in mechanical department, Ethiopian Technical University.

Dr Sadaqat ur Rehman
University of Salford
UK

Large Language Models in Healthcare: Development, applications, and challenges

Large Language Models (LLMs) have emerged as transformative tools in the healthcare sector, offering significant advancements in processing and understanding vast amounts of medical data. In this talk, I will explore the development, applications, and challenges of LLMs in healthcare. I begin by tracing the evolution of LLMs from simple natural language processing tools to complex systems capable of engaging in medical diagnostics, patient interaction, and literature analysis. Key applications will be discussed, including automated clinical documentation, personalized treatment recommendations, and the extraction of actionable insights from unstructured data such as patient records and research articles. Despite their potential, LLMs face significant challenges, including concerns about data privacy, the need for high-quality, diverse training datasets, and the risk of perpetuating biases. Additionally, regulatory hurdles and the need for robust validation frameworks are addressed to ensure that these models are both effective and safe for clinical use. Finally, I will concludes with a discussion on future directions, emphasizing the need for interdisciplinary collaboration to harness the full potential of LLMs in improving healthcare outcomes.

Biography:

Sadaqat ur Rehman (M'18) received his Ph.D. degree (Sept. 2015 – Jun. 2019) with the Tsinghua National Laboratory for Information Science and Technology, Tsinghua University, Beijing, China. He worked as Artificial Intelligence Engineer in Schlumberger (Beijing Geoscience Centre) from November 2019 to June 2020, where he developed different Deep Learning/Machine Learning models for Drilling Dynamics Computation Engine. He is currently working as Assistant Professor in Artificial Intelligence with the Department of Computer Science, University of Salford, UK. He has produced a world leading research activity in the fields of deep learning, machine learning, intelligent systems (with emphasis on artificial neural networks), semantic multimedia analysis, healthcare, optimization and affective computing. He has published more than 80 research papers in international journals and proceedings of international conferences. His research has been highly referenced (about 1650+ citations with an h-index of 22 in Google Scholar). Also, he is co-chair, TPC member and reviewer of prestigious international conferences and journals including, BMLI 2020, Smarttech 2020, CSAE 2018, 2019, 2020, IEEE Transactions on Big Data, IEEE Transactions on Consumer Electronics, IEEE Transactions on AI, Neurocomputing, IEEE TCSVT, Scientific Reports – Nature, Soft Computing, Signal Processing.

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