



Trincomalee Campus
Eastern University, Sri Lanka

BOOK OF ABSTRACTS

ANNUAL RESEARCH CONFERENCE – 2023

ARC - 2023

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Abstracts of the

ANNUAL RESEARCH CONFERENCE – 2023

Trincomalee Campus

Eastern University, Sri Lanka

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MESSAGE FROM THE VICE-CHANCELLOR EASTERN UNIVERSITY



I extend my warmest greetings and heartfelt blessings to all of you on this auspicious occasion of the Annual Research Conference, ARC-2023, hosted by the Trincomalee Campus of Eastern University, Sri Lanka. It is with great pleasure that I address you today under the theme "Actualizing Aspirations - A practice for Embracing an Integral Vision for Transformation."

I am honored to welcome our distinguished Chief Guest, Senior Prof. Udith K. Jayasinghe, the Vice-Chancellor of Wayamba University of Sri Lanka, who brings with him a wealth of knowledge and experience. We are also privileged to have with us our esteemed Keynote Speakers, Prof. T. Mangaleswaran, Vice-Chancellor of the University of Vavuniya, Sri Lanka, and Mr. Arul James Edwin Thambu, Founder & Managing Director of Tamil Nadu Agro tourism Network Corporation, India. Their presence here today reflects the importance and significance of our collective pursuit of knowledge and transformation.

The theme "Actualizing Aspirations" resonates deeply with the core principles of academia and research. It emphasizes the power of turning dreams into reality, aspirations into achievements, and ideas into tangible results. As we gather here to explore this theme, I encourage each one of you to actively engage, exchange ideas, and foster collaborations that will pave the way for meaningful transformation.

In the world of academia, research is the catalyst that propels us forward. It is through research that we gain insights, discover new horizons, and contribute to the betterment of society. ARC-2023 is a platform where scholars and researchers from diverse fields come together to share their knowledge, innovations, and discoveries. I believe that your contributions and discussions during this conference will lead to valuable insights and innovative solutions.

As we embark on this intellectual journey, I urge you to embrace an integral vision for transformation. Seek holistic approaches to address the challenges and opportunities that lie ahead. Collaborate across disciplines and borders to create a synergy that transcends individual capabilities.

Remember that research is not just an academic endeavor; it is a path to improving the human condition, promoting sustainability, and driving positive change. It is my hope that the outcomes of ARC-2023 will not only enrich our understanding but also contribute to the betterment of our communities and the world at large.

I wish you all a fruitful and inspiring conference. May your interactions and discussions be enlightening, and may your research endeavors bring about transformative changes. Let us continue to be relentless in our pursuit of knowledge and remain committed to actualizing our aspirations for a brighter and more prosperous future.

I would like to convey my heartfelt appreciation to the dedicated and enthusiastic organizing committee of this Annual Research Conference, ARC-2023. Once again, I extend my blessings and best wishes to each one of you. Thank you for your dedication to the noble cause of research and education.

Professor. V. Kanagasingam

Vice-Chancellor

Eastern University, Sri Lanka

MESSAGE FROM THE RECTOR TRINCOMALEE CAMPUS



It is a great privilege for me to present an address in the book of abstract, Annual Research Conference 2023 (ARC 2023) of Trincomalee Campus, Eastern University, Sri Lanka to the authors and delegates of the event. The theme of the conference is “**Actualizing Aspirations**, A practice for embracing an integral vision for transformation”, which is the most suitable theme for the current globe. I hope that ARC 2023 will find it very useful, exciting and inspiring conference. ARC 2023 aims to provide a platform for discussing the issues, challenges, opportunities, in findings of information management and research. The ever-changing scope and rapid development of information management, economy, health and livelihood create new problems and questions, resulting in the real needs for sharing brilliant ideas and stimulating good awareness of this important research field.

This ARC 2023 produce a better scientific interaction among researchers and Industrialists while the support received and the enthusiasm witnessed have truly exceeded our expectations. I would like to express our gratitude and appreciation for all of the reviewers who helped us maintain the high quality of abstracts included in the proceedings published by ARC 2023.

I would also like to extend our thanks to the members of the organizing team for their hard work. I appreciate that the authors of ARC 2023 may want to maximize the popularity of their papers. Let us wish that all the participants of ARC 2023 will have a wonderful and fruitful time at the conference, and that our overseas guests will enjoy their trip in Trincomalee, Sri Lanka. Finally, I would like to thank to very distinguish chief guest and guest of honor and keynote speakers, guest speakers, presenters, reviewers, sponsors and participants.

Prof (Mrs) Chandravathany G Devadason,
Conference Chair / ARC-2023
Rector / Trincomalee Campus, EUSL

MESSAGE FROM THE CHIEF GUEST



I am deeply honoured to write this message as the Chief Guest for the Proceedings of the Annual Research Conference – 2023 of the Trincomalee Campus, Eastern University, Sri Lanka under the theme of “*Actualizing Aspirations – A Practice for Embracing an Integral Vision for Transformation*”. It is indeed a pleasure to see such an Annual Research Conference creating a platform for the researchers to foster interdisciplinary collaborations and passing the boundaries of knowledge while addressing the social issues. The theme of the Conference features the importance of the desire of self-fulfillment through the dissemination of knowledge and being innovative through research findings tackling the societal issues. It marks the insightfulness of the Campus in a broader manner and I am delighted to be a witness of this success.

I take this opportunity to encourage all the participants, including the distinguished researchers, to seize this opportunity to share their valuable research findings, to engage with other research networks, and to emerge with valuable insights. Moreover, such an incessant annual event will navigate the rapidly changing society, where the importance of research and innovations cannot be exaggerated. I really appreciate the relentless efforts and dedication of the organizing committee for making this event a reality aiming the pursuit of knowledge. I would like to express my gratitude to the Trincomalee Campus attached to the Eastern University, Sri Lanka for inviting me to grace this occasion as the Chief Guest. I offer my best wishes for all the presenters and look forward to engage with you all during this Conference and even after to promote excellence in academic and research arena of your Campus.

Snr. Prof. Udith K. Jayasinghe-Mudalige

The Vice-Chancellor
Wayamba University of Sri Lanka

MESSAGE FROM THE CONFERENCE CO-CHAIRS



It is with great pleasure and anticipation that we welcome you to the ARC-2023 on the theme of "Actualizing Aspirations: A Practice for Embracing an Integral Vision for



Transformation." As co-chairs of this esteemed event, we are deeply honored to witness the convergence of brilliant minds, innovative ideas, and transformative aspirations in this vibrant academic community. The theme of this year's conference is particularly significant. "Actualizing Aspirations" signifies our shared commitment to not just dream, but to turn those dreams into tangible realities. It calls for action, resilience, and determination to bridge the gap between aspiration and accomplishment. By embracing an integral vision for transformation, we acknowledge the interconnectedness of various fields of study and perspectives, recognizing that true progress comes when we collaborate, learn from one another, and integrate diverse ideas into cohesive solutions.

In the diverse tapestry of research presented here, you will find a wealth of knowledge, groundbreaking insights, and innovative methodologies. This conference serves as a platform for scholars, researchers, and practitioners to engage in meaningful discussions, exchange valuable insights, and explore avenues for collaboration.

It is a celebration of intellectual curiosity, a testament to the power of collective wisdom, and a testament to the potential for positive change that lies within each of us.

We would like to express our heartfelt gratitude to the organizing committee, the dedicated researchers, distinguished speakers, reviewers, volunteers, sponsors, our esteemed attendees and all individuals who have worked tirelessly to make this conference a reality. Your dedication and passion have played a pivotal role in shaping this intellectual gathering into an enriching and inspiring experience for everyone involved. We are confident that this conference will not only enrich our understanding but also serve as a catalyst for positive change.

As we embark on this enlightening journey of exploration and discovery, let us remain open-minded, empathetic, and collaborative. Let us embrace the challenges and opportunities that come our way with enthusiasm and determination. Together, we can actualize our aspirations and pave the way for a brighter, more inclusive future. We wish you all a stimulating and fruitful conference experience.

Warm regards,

D. Ruwan Lakjeewa Fernando
Senior Lecturer &
Co-Chair
Annual Research Conference

Dr. S. Ushakanthan,
Senior Lecturer &
Co-Chair
Annual Research
Conference

MESSAGE FROM THE SECRETARY AND THE CO-SECRETARY



It is with deep pleasure that we draft this message on the occasion of the Annual Research Conference - 2023 on “Actualizing Aspirations - A Practice for Embracing an Integral



Vision for Transformation” organized by the Trincomalee Campus, Eastern University, Sri Lanka.

The Annual Research Conference of Trincomalee Campus of Eastern University, marked several exciting milestones for our organization. There were 24 papers received from six different tracks including Arts and Literature, Western and Indigenous Medicine, Natural Science, Entrepreneurship and Management, Artificial Intelligence and data Science and Agriculture, Marine Ecosystem and Tourism. The supportive and collaborative nature of the conference builds on our mission to support adult learners in contexts of higher education. As we continue to grow as an organization, your participation will be increasingly important to carrying out the work we are charged with from our mission.

It is an exciting time for scientists, academicians, engineering professionals and researchers, as we continue to grow and adapt

systematic manuscript management, constructive and critical blind review process.

Theme “Actualizing Aspirations - A Practice for Embracing an Integral Vision for Transformation” which is a very timely topic to address the problems and gives a need for a transformation. . We believe that all the participants will be benefited immensely by acquiring research based advanced knowledge and contribute towards creating appropriate policies and strategies for national development. On behalf of the organizing committee, we take this opportunity to extend our gratitude to the Vice Chancellor and Rector for their immense support and encouragement to make this event successful.

We profusely thank our Chief Guest, for gracing the occasion through their valuable messages. Further, we are grateful to our Guest of Honors, other guests, Keynote Speakers, and Guest Speakers. We also express our sincere thanks to the Senior Academics and all other Academics, Administrators, Organizing Committee Members, Non-academics and Support Staff of our campus Presenters and Participants and all others who gave their support to make this event successful.

We the Secretary and Co-Secretary of Annual Research Conference of Trincomalee Campus of Eastern University are eagerly waiting your arrival and wish you a Successful, enjoyable & memorable Conference

Mr. S.Uthayaraj

Secretary / ARC - 2023

Mrs.Jenitta Resi Tony

Co-Secretary / ARC- 2023

KEY-NOTE ADDRESS

Human Resource Management Challenges in Higher Education Institutions



Higher education institutions success mainly depends on Human Resources and its management consistently plan on providing quality education, research and regional and national development. To make those plans successful, they have to face several human resource management challenges. These challenges can slow the process of achieving their ultimate goals, but overcoming them effectively manage HR.

Higher Education Institutions are Universities, Other government universities, Degree awarding institutions and Professional institutions. Human Resource Management refers to the process of managing people who are part of an organization and contributing to its success.

Challenges identified in HEI are Finding and Hiring the staff, staff Retention, use of advanced technology and automation tools, Budget Challenges, Diversity and Inclusion, Globalization of Higher Education, shortages of staff, Performance appraisal, lack of human resource development, interest in job and institutions and career, tax system, compensation (professional staff) and rewards, union disputes, bureaucracy and red tape system, lack of professional development facilities, poor working condition, lack of motivation, etc....Hence, quality education is challenge in State Universities because HR is key resources to the organization. Considering the

importance of human resource management, the following are recommended Relief from restriction to recruitment, allow appoint Non-Academic staff open advertisement, Allow Universities appoint Executive staff, Tax exception or less tax to Academic staff and no tax for facilities to key officials. The address concludes that higher education institutions play vital role in developing Human Resources for various sectors. But Higher Education Institutions are weak in their own human resource management. The reasons behind these weaknesses includes financial condition of the HEI, political forces and peer institutions policies. Therefore, effective practice of Human Resource Management will support to achieve goals of the Higher Education Institutions.

Keywords: Higher Education Institutions, Human Resource Management, Challenges

Prof. T.Mangaleswaran
Vice Chancellor
University of Vavuniya

SCIENTIFIC DIALOGUE

Eco-village Community Development for Agrotourism

Mr. Arul James Edwin Thambu

Founder and Managing Director

Tamil Nadu Agrotourism Network Corporation, India



This abstract presents an innovative concept for an agrotourism center situated within a 100-acre expanse, located within a 35-kilometer radius of a bustling city. The envisioned ecovillage aims to foster a community of 200 families, comprising both yearly and lifetime subscribers, dedicated to embracing an organic lifestyle. The center offers a range of unique features to ensure a holistic experience for residents and tourists alike. Key elements of the proposed agrotourism center include a fully operational dairy farm with a daily production capacity of 2000 liters of organic milk. Complementing this, the ecovillage will house a world-class Ayurvedic herbal treatment facility catering to the health and wellness needs of the community and visitors. The center will also boast an extensive range of organic fruits and vegetables, serving as a sustainable food source for the community and a delightful culinary experience for visitors.

In addition to culinary offerings, the ecovillage will include a community restaurant that promotes healthy and fresh foods, highlighting the benefits of organic farming. A dedicated school will provide educational programs to impart knowledge about the value of community living and facilitate the development of similar sustainable communities. Various courses related to agrotourism will be offered to school, college, and research students, fostering their interest in sustainable agricultural practices. To promote the ecovillage and its offerings, a specialized content creation department will be established to generate awareness through various digital platforms, including a dedicated website, YouTube channel, and social media pages. The center will also host cultural events, showcasing diverse cultures and

traditions, while expert artisans will train both community members and visitors in producing unique handmade products.

Emphasizing the importance of physical fitness, the agrotourism center will offer activities such as farming, nature walking, bird watching, and fishing within its own man-made pond and forested areas. A shopping center will enable the sale of organic products to the community, tourists, and visitors, with the profits reinvested to create more such agrotourism centers.

The proposed agrotourism center aims to create a sustainable and self-sufficient community, while also promoting the principles of organic living and agrotourism to the world. By combining elements of agriculture, education, wellness, and cultural exchange, this visionary project endeavors to shape a future where communities thrive in harmony with nature, ensuring a brighter and greener tomorrow. Revenue Streams:

- a. Agrotourism: Generate income through various activities such as farm tours, nature walks, bird watching, fishing, and hunting.
- b. EcoVillage Subscriptions: Offer yearly and lifetime subscription packages to families who wish to live and enjoy the organic lifestyle provided by the community.
- c. Dairy Farm: Sell dairy products produced from the 500-liter per day dairy farm.
- d. Ayurvedic Herbal Treatment: Offer world-class Ayurvedic herbal treatments to both the community and tourists.
- e. Organic Fruits and Vegetables: Sell organic produce grown within the Agrotourism Center to the community, restaurants, and visitors.
- f. Community Restaurant: Run a restaurant within the community that serves healthy, fresh, and organic food to residents, tourists, and visitors.
- g. Education and Courses: Provide courses related to agrotourism for school, college, and research students.
- h. Content Creation and Promotion: Create content through the website, YouTube channel, and social media pages to promote the community, organic products, and agrotourism.
- i. Artisan Products: Train community members and visitors in producing various artisan products and sell them through the shopping center.
- j. Consultancy: Offer consultancy services for individuals or organizations interested in establishing their own agrotourism centers.

- k. Solar Plant: Generate revenue by selling excess electricity generated from the solar plant to the local power grid.

Target Market:

- a. Tourists: Attract domestic and international tourists interested in experiencing an organic lifestyle, Ayurvedic treatments, and agrotourism activities.
- b. EcoVillage Subscribers: Attract families seeking a sustainable and organic living environment.
- c. Organic Product Consumers: Target individuals who prefer organic fruits, vegetables, dairy products, and artisanal goods.
- d. Students: Cater to students from schools, colleges, and research institutions who are interested in agrotourism courses and educational programs.

Cost Structure:

- a. Land Acquisition and Maintenance: Expenses related to acquiring and maintaining the 100-acre property, including landscaping, infrastructure, and security.
- b. Staffing: Salaries for employees across various departments, including farm workers, educators, healthcare professionals, restaurant staff, and content creators.
- c. Infrastructure and Utilities: Costs for constructing and maintaining buildings, the solar plant, dairy farm facilities, ponds, and forests.
- d. Marketing and Promotion: Budget allocated for advertising, website maintenance, social media campaigns, and promotional events.
- e. Supplies and Inventory: Expenses for purchasing seeds, organic feed for livestock, medicinal herbs, kitchen supplies, and artisan materials.
- f. Operational Expenses: General expenses such as insurance, legal fees, transportation, and maintenance.

Projections:

- a. Revenue Growth: Project revenue growth over time based on increasing tourist visits, eco-village subscriptions, and organic product sales.
- b. Cost Optimization: Continuously optimize operations and reduce costs by implementing sustainable practices, maximizing resource utilization, and minimizing waste.

- c. Expansion: Use profits generated to create additional agrotourism centers and expand the consultancy services.
- d. Community Development: Develop the community by adding more facilities, enhancing the educational programs, and promoting cultural activities.

GUEST SPEAKER'S ADDRESS – I

The Mind and Literature – A Human Perspective

Professor J. Kennedy

Professor in English, Faculty of Arts & Culture
Eastern University, Sri Lanka.



The mind, language, literature, and the culture are inseparable but different entities. However, they all work together in many aspects, especially in the creative art. The human mind is an abstract phenomenon, but this untouchable matter is the base for every action and reactions of the human activity.

“Emotion” and “feeling” are the two words that everyone knows. However, many of us may not be able to separate them and may not know that these two play two different roles in the human activities. Feeling is an experience that is being experienced by the physical body. In other words, feeling is a measurable experience which is experienced by the physical parts of the body such as experiencing a touch. Whereas emotion is another kind of experience that is being experienced by the abstract part of the body such as happiness, sadness, anger, etc. In other words, emotion is an immeasurable experience which cannot be quantified in terms of measurement. Everyone identifies that we have “mind” but unable to detect it as that of any of the physical parts of the body such as eye, hand, heart, brain, etc. Emotions are immeasurable and abstract entities, and they are experienced by the mind. Since mind is an abstract phenomenon, the emotions that are growing from the mind are also by default become abstract matters. Emotions are evolved from the mind and finally are settled on the mind. The settlement of such emotion is nothing, but we call “satisfaction.”

When a human wants to release her/his emotion, she/he becomes satisfied and then settles her/his mind. The releasing of emotion could be anything. That is, the releasing of emotion may by a physical reaction such as smiling

or laughing or hugging. The extend of releasing emotion is a creative art. In this light, language and literature (art at a larger sense) are evolved from the mind. When a need comes for releasing of any emotion; literature evolves through language. This is the natural process of every human activity. On a larger scale, culture evolves from the mind by itself.

GUEST SPEAKER'S ADDRESS II

Food is Medicine: A Holistic Approach to Addressing Non-Communicable Diseases

Prof. K.T. Sundaresan

Professor in Medicine FHCS, EUSL
Specialist Physician in Internal Medicine
University Medical Unit
Teaching Hospital, Batticaloa



The increasing prevalence of non-communicable diseases (NCDs) has emerged as a critical global health concern. NCDs, comprising conditions like diabetes mellitus, heart diseases, , cancers, and lung diseases, have surpassed all other causes of mortality, disproportionately affecting low and middle-income populations. In 2008, NCDs were responsible for nearly 70% of the worldwide deaths. Sri Lanka, for instance, has a significant burden, with nearly one in ten adults living with diabetes or prediabetes, a rate that rises to one in five among Tamil and Muslim communities.

Despite advances in modern medicine, the relentless surge of NCDs persists. This alarming trend underscores the need to address the root causes of NCDs, which are linked to our dietary choices and mindset. Notably, the escalating exposure to chemicals, such as glyphosate, a herbicide which is a carcinogen, is implicated in the rising prevalence

of chronic diseases in Westernized societies. Consequently, an urgent emphasis is needed to transform lifestyles and eliminate the use of harmful chemicals in our food supply. Substantial evidence from various studies underscores the role of dietary interventions in preventing and managing NCDs. Regrettably, dietary modifications are often overlooked in favor of pharmaceutical interventions.

In accordance with an ancient Ayurvedic proverb, "When diet is wrong, medicine is of no use; when diet is correct, medicine is of no need," it is clear that our dietary choices are paramount to combating NCDs effectively.

Moreover, the impact of thoughts and emotion on health remains a largely neglected aspect of NCD treatment. Chronic stress, fear, and worries have been linked to conditions like diabetes and heart disease. The pioneering work of Japanese scientist Dr. Emoto demonstrated the profound influence of thoughts on water molecules, questions about the potential impact of our thoughts and words on the human body, composed of nearly 70% water.

One crucial dimension conspicuously absent from modern medicine is the role of consciousness—an intelligence that intricate functions of the human body. The human body operates as a self-regulating system, exemplifying an innate healing capacity that remains largely untapped. Mastery of self-healing techniques and understanding the profound role of consciousness in wellness warrants exploration.

This talk explores the holistic approach of considering food is medicine, highlighting the imperative need for dietary changes, mindfulness, and recognition of the profound intelligence inherent in the human body. By embracing a more comprehensive understanding of health and disease, we can lead the way for a future where NCDs are managed and prevented through a harmonious integration of body, mind, and consciousness.

GUEST SPEAKER'S ADDRESS - III

Science beyond Matter – The Quantum Leap

Prof. F.C.Ragel

Professor of Physics

Department of Physics

Faculty of Science, EUSL



The natural sciences involve studies from cosmological scale that is around 93 billion light years ($\sim 10^{27}$ m) down to the Plank scale ($\sim 10^{-34}$ m), studying galaxies, black holes, solar systems, earth and environment, life sciences, and physical sciences. At the atomic scale and below ($\lesssim 10^{-9}$ m), nature behaves completely different from the sensory macroscopic world. For example, when microscopic particles (electrons, neutrons or atoms) sent one-by-one through a double slit, experimental studies show that each particle passed through both slits (holes) simultaneously. Quantum mechanics is the fundamental theory in physics that describes the behavior of nature at the microscopic scale of atoms and subatomic particles, which is one of the most successful theories in the history of science.

We are currently in the midst quantum leap; the first quantum revolution gave us new rules that govern physical reality. The second quantum revolution will take these rules and use them to develop new technologies in coming decades that includes quantum information technology, quantum electromechanical systems, quantum engines, coherent quantum electronics, quantum optics, coherent matter technology and quantum teleportation.

The principles of quantum mechanics have opened the doors for a revolution in the computing world; quantum computers have much faster processing speeds because they are capable of dealing with multiple tasks simultaneously, whereas traditional computers do one task at a time. Google

in July 2023 reported its new quantum computer is a staggering 241 million times more powerful than its predecessor, making calculations in just 6 seconds that would take the best existing conventional supercomputers 47 years. Quantum computers are to bring a revolution in many areas such as in designing new effective medicines and vaccines, empowering artificial intelligence, cryptography, modeling financial markets, quantum internet, and many more. Nature journal in September 2023 reported the experimental realization of the first-ever working quantum engine; a many-body quantum engine ('Pauli engine'), where the temperature variation, usually induced through coupling to a hot or cold thermal bath in a conventional engine, is here replaced by a change of quantum statistics of the system, from Bose–Einstein to Fermi–Dirac (and back). This engine cyclically converts energy stemming from the Pauli Exclusion Principle and the mechanism is of purely quantum origin. Moreover, quantum dots are part of a revolution in engineering atoms in useful ways – Nobel Prize for chemistry in 2023 recognizes the power of quantum engineering in nanotechnology.

Quantum entanglement has challenged some of our most cherished classical views, such as locality and reality. The Nobel Prize for Physics in 2022 for experimentally observing quantum entanglement, confirms that the natural world really behaves in a strange way, which also gives insights into the synchronized connection of the unified universe.

Unified field theory brings together quantum mechanics and general relativity by unifying all four forces of nature and all types of matter, which show that every material object in the universe is manifested by oscillating superstrings at Planck scale ($\sim 10^{-34}$ m). A deeper understanding of the nature of reality through the unification of physics and science, generates a direct engineering path to significant energy production: from the structure of quantum vacuum fluctuations and the alteration and control of the space time curvature to yield gravity control.

Moreover, studies correlating unified field and ancient spirituality (e.g. Vedic Science), give insights into the ancient wisdom and practices with meditative connection to the conscious intelligence of the unified universe, which also show corroboration with emerging neuroscience.

Therefore, there is immense potential for multidisciplinary investigations into the nature's laws at the fundamental level that would revolutionize our realization through scientific understanding to thrive and harmonize the technologies with the fundamental wheelworks of nature.

GUEST SPEAKER'S ADDRESS - IV

Digital Transformation in Entrepreneurship and Management

Prof.B.Nimalathasan

Senior Professor in Accounting
Department of Accounting
University of Jaffna



The COVID-19 pandemic has fundamentally changed the world as we know it. People are living differently, buying differently and in many ways, thinking differently. Supply chains have been tested. Retailers are closing doors. Consumers across the globe are looking at products and brands through a new lens. Digitization is moving information from analogue to digital format. Digitalization does transform a business, employees can work faster and better with data that is instantly accessible and not misfiled in a cabinet somewhere in a musty storeroom. Digital technology allowed digital transformation to happen and this has revolutionized current business methods and has created entirely new ways of doing business. Digitalization does transform a business, employees can work faster and better with data that is instantly accessible and not misfiled in a cabinet somewhere in a musty storeroom. Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. A business may take on digital transformation for several reasons. But by far, the most likely reason is that they have to: It's a survival issue. In the wake of the pandemic, an organization's ability to adapt quickly to supply chain disruptions, time to market pressures, and rapidly changing customer expectations has become critical. Digitalization increases productivity and efficiency while reducing costs. Digitalization improves an existing business process or processes but doesn't change or transform them. It's also a cultural change that requires

organizations to continually challenge the status quo, experiment, and get comfortable with failure.

Keywords: Digitation, Digitalization, Digital Transformation

GUEST SPEAKER'S ADDRESS - V

The Rise of Artificial Intelligence: Promise and Peril in a Data-Driven World

Dr. Ajmal Hinas

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By carefully observing nature, one can understand that intelligence is progressively gaining dominance over mere physical strength, a pattern evident in various aspects of our world, from biological creatures to human-created systems.

All of us will agree that AI is transforming all aspects of our lives without any doubt. However, what's fascinating is that this transformation is occurring so swiftly that many of us might not fully realize its extent. The speed at which AI is advancing often surpasses our collective awareness and comprehension, making it nearly impossible to estimate its short-term and long-term impacts. We can draw parallels from our recent history. For example, the development of smartphones and their widespread adoption led to a paradigm shift that was previously unimaginable.

Another point worth noting is that we are compelled to redefine many aspects of our systems, including rules, regulations, and some fundamental definitions. As educators and researchers, we are well aware that we can no longer adhere to some of the assessment methods that have been in practice for many decades. This transformation did not happen gradually but rather rapidly with the public release of some AI tools.

Responsible use of AI and widespread awareness of its capabilities are also very crucial. According to my knowledge, AI in its current state does not generate its own ideas. It is usually the user who can use AI as an assistant to generate new ideas. As an academic, I have to say it is not only the rise of AI but also the rise of fake authors.

Explainability of AI is yet another challenge we are currently facing. AI remains a significant black box, seemingly producing mostly correct outputs by magic. We, including AI experts, are still grappling with explaining how AI generates these outputs. Can we reliably use these systems indiscriminately without fully understanding their mechanisms? Who will be accountable for decisions made by AI systems?

Lastly, are we inadvertently paving the path to our own extinction? If we closely observe nature, it becomes evident that the world was initially dominated by physical strength. However, it is increasingly converging towards a greater emphasis on intelligence, where intelligence plays a more predominant role in shaping the world. Who knows if machines with artificial intelligence could be the creatures of the future as the next step of evolution? In that case, it is not artificially created intelligence but a natural outcome of the evolution. Only the future can provide answers to these questions.

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A HOLISTIC APPROACH TO GERMAN LANGUAGE TEACHING THROUGH INTEGRATION OF LITERATURE

Wijethilake S. P.

Abstract - Foreign language education seeks a variety of innovative approaches to enhance language skills of the learners continuously. In this context, literature plays a vital role. The study employs in exploring the impact of integrating literary work into foreign language education. The focus is on teaching German as a foreign language to learners of German as a foreign language at University of Kelaniya, Sri Lanka. The objectives of the study are to examine the influence of integrating literary work to enhance the foreign language acquisition. The sample group consisted of 40 undergraduates of German as a foreign language at University of Kelaniya who pursue the Bachelor of Honors degree in their 3rd academic year. The literary Text: Perfume- Story of a Murderer served as the literary text for the data analysis of the study, with its complicated grammatical structures, vocabulary and cultural aspects. A mixed approach was used in the study to collect qualitative and quantitative data. Quantitative data were collected through pre and post assessments distributed among the students whereas qualitative data were gathered through analysis of the activities, classroom observations and student feedbacks. The findings show a significant improvement of language skills including vocabulary, grammar, writing accuracy, coherence, and text comprehension, speaking skills, critical thinking, historical knowledge and cultural awareness. Further it shows that, selecting culturally, historically and linguistically challenging literal texts along with a suitable curriculum to integrate the literary work can encourage a holistic approach to foreign language instruction by promoting not only the language skills but also the cultural and intellectual competencies of the language learners.

Keywords: *Foreign language; Literature; German as a foreign language, Language Teaching, Holistic Approach*

ERROR ANALYSIS ON THE WRITTEN-ENGLISH OF THE FIRST YEAR STUDENTS AT TRINCOMALEE CAMPUS

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Abstract- This research paper involves in a study of error analysis on the written sentences in English produced by the first year students who prosecute B.A in Communication Studies at the Department of Languages and Communication studies in Trincomalee Campus. The research paper begins with a systematic review of the concepts and theories concerning Error Analysis which sets the platform for the theoretical base. Subsequently, the Error Analysis focuses on finding out the syntactical errors under the selected grammatical categories while searching for the possible reasons causing errors. Eventually, the researcher suggests that the language teaching lecturers should understand the process involved in learning a new language. Therefore, the lecturers should understand the root causes of errors while attempting to find treatment for errors. It is paramount that the lecturers must approach error-corrections in accordance with the students' linguistic competence, their affective factors embedded with different ethnic background. This error analysis has been undertaken with an intention to bring awareness to the teaching staff to help students produce better writing with less grammatical or no grammatical mistakes.

Keywords: *Error analysis; syntactic errors; inter and intra language; causes for errors*

EDGAR ALLAN POE'S *SOME WORDS WITH A MUMMY*: A CONSPIRACY THEORETICAL READING

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Abstract – Humanity is a paradoxical phenomenon. Edgar Allan Poe's thought-provoking short story, *Some Words with A Mummy* tends to explore how Poe's narrative serves as a literary device to examine the human inclination towards conspiracy thinking and the ramification of such beliefs. Poe's cryptographic narrative approach that examines human interaction with knowledge streamlines the reader's thoughts in a critical manner. Some mythological aspects of this tapestry tend to textual analysis with biblical mythology. This paper focuses on the narrative and conspiracy theoretical argument, through an in-depth examination of the character's interactions and dialogues. Through contextualizing the story within the broader historical and societal landscape of the 19th century, elucidates the relevance of Poe's exploration of contemporary conspiracy culture. Another objective is to identify how the conspiracy argumentation heads human's thinking mechanism into a crisis in life and how it changes human desires. Additionally, this paper aims to promote a balanced evaluation between archetypical knowledge and Egyptology. Eventually, this research aims to foster critical thinking and promote a balanced inquiry of information, urging readers to critically question and verify claims before succumbing to the allure of conspiracy theory.

Keywords: *Conspiracy theory, mythology, Egyptology, Critical thinking, Edgar Allan Poe*

THE MEDIA STUDENTS' UNDERSTANDING OF SINHALA CINEMA'S CREATIVE EFFORTS WITH DIRECTOR LESTER JAMES PIERIS'S FILM "NIDHANAYA". A CASE STUDY.

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Abstract - This research focuses on the media students' understanding of Sinhala cinema's creative efforts through an in-depth analysis of Director Laster James Pieries's film "Nidhanaya". This study serve as a case study. This explore understanding and interpretation of the creative effects that used in the movie "Nidhanaya". The researchers have selected media students for the data collection. Because they learn the subjects related with the movie analysis and because of that they have knowledge to analyze the cinematography in the movies. The researchers did a case study on 50 media students from 2nd and 3rd year. 25% students are from 2nd year and 25% students are from 3rd year. The result is positive regarding understanding of Sinhala cinema's creative efforts. Their perspective about this film is really good and very creative producing one and that is something to think about in our life. According to the respondents about creative effort of the movie is director used very good camera movements, color managing, dialogues and sound systems. So in the theory level and practice level they have the understanding about creative effort that used in the film "Nidhanaya". As a media students they have enough knowledge to understand Sinhala cinema's creative efforts with Nidhanaya movie. As the suggestion media students need practice and guidance to these kind of research.

Keywords: – *Sinhala cinema, creative efforts, Nidhanaya, Lester James Pieries*

SEERAGA CHOORANAM – AN OVERVIEW OF THE COMMON PHARMACOLOGICAL ACTIONS OF ITS HERBAL INGREDIENTS

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Abstract - Seeraga chooranam is one of the internal medicines used in the Siddha system of medicine. It is used to cure pittha diseases, kirukiruppu (giddiness), vaanthi (vomit), agni mantham (dyspepsia), ushnam (heat) and kaangai (heat or pyrexia). It is prepared by using Seeragam (*Cuminum cyminum* Linn.), Pazhach chaaru (*Citrus limon* (Linn) Burm.f.), Karuppan chaaru (*Saccharum officinarum* Linn.), Mosumosukkai chaaru (*Melothria maderaspatana* (L.) Cogn.), Nellikai chaaru (*Embllica officinalis* Gaertn.), Thuthuvalai chaaru (*Solanum trilobatum* L.), Veppam pattai chaaru (*Azadirachta indica* A. Juss.), Thumbai chaaru (*Leucas aspera* Spreng.) and seeni (*Saccharaum officinarum* Linn.). The objective of this study is to find out the common pharmacological actions of the herbal ingredients used in the preparation of Seeraga Chooranam (Sc). The information have been retrieved from traditional siddha text books, journal publication websites and electronic data bases. The current study reveals that the herbal ingredients has anti-inflammatory, anti-oxidant, anti-cancer, anti-microbial, analgesic, anti-osteoporotic, anti-hyperglycaemic, anti-asthmatic, antitussive, expectorant, bronchodilator, immunomodulation, hepato protective, diuretic, laxative, appetizer, anti- dyslipidaemic, anti-pyretic, anti-ulcerogenic, cardio protective, anthelmintic, anti-platelet aggregation, carminative, anti-hypertensive, astringent, anti-allergic and anti-venom actions. The overall results reveal that all herbal ingredients of Sc possess anti-inflammatory, anti-oxidant, anti-cancer, anti-microbial, anti-hyperglycaemic, immunomodulation, hepato protective, diuretic, anti- dyslipidaemic, anti-ulcerogenic, and anthelmintic actions.

Keywords: *Seeraga chooranam, pharmacological actions, Siddha Medicine, Cuminum cyminum Linn*

KAYAKATPAM FOR THE PREVENTION OF NON-COMMUNICABLE DISEASES AND GERIATRIC CARE IN SIDDHA MEDICINE – A REVIEW

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Abstract - Healthcare systems worldwide have grappled with rising rates of non-communicable diseases (NCDs), an ageing population, and escalating healthcare expenditures. NCDs have been the leading cause of morbidity and mortality worldwide, accounting for over 80% of deaths in Sri Lanka. Ageing is an inevitable process characterized by progressive functional decline, making it crucial to discover methods to improve the well-being of the elderly and promote healthy ageing. Therapeutic strategies in various medical systems primarily focus on preventive and curative approaches. In Siddha medicine, a unique therapeutic technique called Kayakatpam, a promotive and rejuvenate approach, addresses methods and medicines for longevity and enhancing innate health. It improves the lifespan; delays ageing and, enhances cognitive abilities. Essentially, Kayakatpam nourishes the three integral components: Mind, Body, and Soul. Kayakatpam involves herbs and herbo-mineral combinations, along with animal products, Pranayamam (breathing exercises), and Yogam. These are recommended for normal individuals to boost immunity, promote general health, prevent ailments (Pothu katpam), and aid to recover from specific diseases (Sirappu katpam). This review article focused on Kayakatpa medicines and methods which were easily accessible, simple to practice, and cost-effective for daily living. They primarily demonstrated antioxidant and immune-modulatory attributes in their medicinal functions. This approach gains even more insights with the increasing medical expenses in today's world, and contributes to the prevention and management of non-communicable diseases and geriatric care through its unique rejuvenating properties and the habits it advocates for delaying ageing-related changes and complications in the elderly. A deeper exploration of the topic of Kayakatpam has the potential to lead to breakthrough in combating various diseases and promote healthy living with ageing.

Keywords: *Geriatric care, Kayakatpam, Non-communicable disease, Rejuvenate approach, Siddha Medicine.*

MANAGEMENT OF FOREARM FRACTURE IN ADULT– A CASE REPORT

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Abstract - Bone fractures are common public health problem among children and adolescents all over the world. 80% of upper limb fractures contributed to a significant level of morbidity and mortality. The Indigenous Medical System in Sri Lanka Murivu and Nerivu (Fracture) management mostly practice by the traditional bone setters and bone healers who commonly used variety of preparation such as Pattu, Oil, Paste and Powder to improve the bone healing process. The main intention of this study is to clinically correlate the rotations of forearm with the radiological restoration of radial bow after Traditional Management of bone forearm fracture in adults. A 28 – Years –old female patient was selected for the study, having history of fall on outstretched hand and complaints of pain over her Left Forearm. On physical examination –grossly deformed, and swelling over her left forearm and tenderness present over her left elbow and wrist joints. The range of motion of her left wrist and left elbow joint were painful & restricted. Radius bone setting was fixed with Varma Manipulation setting method. Bamboo splints were placed in the lateral and medial position of elbow to forearm joint and bandaging was done moderately after external applications of herbal oil on the site of fracture. In addition to the above treatment for -15 days, Murivu oil 30 ml with Othiyam paste (Lansea coromandelica paste) was applied with bamboo splints and patient was asked to perform passive and active exercise. Internally Pirandai Choornam (Cissus quadrangularis powder) 10 gm was given per day in three divide doses for 30 days. Then 30 ml Narayana oil with 30 g paste of Ashwaganda was applied with bamboo splints and patient was asked to do the active exercises. The reasons for nonunion include avascular necrosis, the two ends are not apposed, infection (Osteomyelitis). Improper fixture of the fracture and soft –tissue imposition. Siddha & Ayurvedic and native orthopedic preparation are capable of increased fracture healing activity and antimicrobial properties and these medicinal preparations would enhance the healing of fracture bone and lead to proper reunion. In this case study the Radial bow of the injured forearm was restored after Traditional Fracture management to the near normal value and the functional outcome was excellent.

Keywords: *Murivu, Nerivu, Pirandai, Othiyam.*

POWDER MICROSCOPIC EVALUATION OF HERBAL PLANT MATERIALS OF AMURTHASHTAKA KWATHA

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Abstract - Background and justification: Herbal medicines have been commonly used for treatment and prevention of diseases, health promotion and enhancement of the span and quality of life. Objective: This study has focused on investigating powder microscopic characteristics of herbal constituents of *Amurthashtaka kwatha*. Methodology: The constituent herbal plants such as bark of *Azadirachta indica*, rhizome of *Cyperus rotundus*, *Picrorhiza scrophulariiflora* and *Zingiber officinale*, seeds of *Holarrhena antidysenterica*, heartwood of *Santalum album*, stem of *Tinospora cordifolia*, and whole plant of *Trichosanthes cucumerina* were purchased from three Ayurvedic shops and two different natural habitats. The powders of the authenticated herbal plants were studied through Zeiss Axio microscope with a camera for the evaluation of general and specific cells, tissues, and cell inclusions which are specific for the particular herb. Results and discussion: Crystals, fibres, starch grains, tracheids and xylem vessels in *A. indica*; cork cells, endodermis cells, fibres, epidermal cells, parenchyma cells, tracheids, starch grains and xylem vessels in *C. rotundus*; fibres, starch grains and crystals in *H. antidysenterica*; fibres, crystals, thickenings, tracheids, starch grains, thickenings and xylem vessels in *P. scrophulariiflora*; crystals, fibres, starch grains, xylem vessels, oil canals and ray parenchyma in *S. album*; cork cells, xylem vessel, starch grains, tracheids and fibres in *T. cordifolia*; xylem vessels, exocarp, thickening, starch grains, fibres and trichomes in *T. cucumerina* while starch grains, thickenings and xylem vessels in *Z. officinale* were identified as specific identification characters in each plants. Conclusion: Present pharmacognostic study would be beneficial to establish authenticated standards for identification, detection of contaminants and adulterations as well as standardization of herbal ingredients of *Amurthashtaka kwatha*. The powder microscopical examination of constituent herbal plants of *Amurthashtaka kwatha* confirmed their identity and morality as original plants.

Keywords: Adulteration, *Amurthashtaka kwatha*, herbal medicines, polyherbal formulation and powder microscopy

ANTHELMINTIC ACTIVITY OF JUICE AND INFUSION OF ARISTOLOCHIA BRACTEOLATA LAM. - AN IN VITRO STUDY

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Abstract - Worm infestation and anthelmintic resistance offer fascinating insights into global health. The juice and infusion of leaves of *Aristolochia bracteolata* Lam. (*A.bracteolata*) were screened to evaluate anthelmintic activity in adult earthworms (*Pheretima califricant* (Kingberg)), since their anatomy and physiology are similar to those of human intestinal roundworms. The plant was collected and authenticated. The mature earthworms were divided into 20 groups, each with two earthworms. Albendazole (20mg/mL) and water were employed as positive and negative controls, respectively. By serial dilution, different concentrations of fresh leaf juice (25%, 50% and 100%) were obtained. The infusions were made at four different temperatures (4°C, 27°C, 65°C and 100°C), the earthworm's paralysis (TP) and death times (TD) were recorded. When compared, TP and TD with the juice with albendazole (TP;P=0.031, TD;P=0.012) and the infusion with albendazole (TP;P<0.001, TD;P<0.001) showed a significant difference. However, juice at 100% concentrations showed minimum TP (47.5 min) and TD (63 min) compared to albendazole (TP-68; TD-90.5 min). Dry and fresh 65 °C and 100 °C temperature infusions showed higher TP (>236 min) and TD (>275 min). However, the infusion of both dry and fresh leaves at 65 °C with a constant temperature revealed an equal TP (141.8 min). The infusion prepared at 4°C and 27°C did not result in any deaths or paralysis. The juice has lower TP and TD than the infusion. The current study revealed that *A. bracteolata* leaves exhibit anthelmintic activity. According to TP and TD, juice has more effective anthelmintic action than infusion. The management of worm infestations will be improved by insightful research on the anthelmintic activity of *A. bracteolata*. The detailed study needed prior to clinical practice.

Keywords: *A.bracteolata* 1, Anthelmintic activity 2, Earthworms 3, Roundworm 4

ELECTROCHEMICAL STUDIES ON POLY (ETHYLENE OXIDE) BASED ALUMINUM-ION CONDUCTING GEL-POLYMER ELECTROLYTES

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Abstract - In the last two decades, Li-ion batteries have been developed with high energy and power densities to satisfy the need of electrochemical energy storage for portable electronics as well as automobiles. However, the limited natural resources of lithium raw materials compelled researchers to investigate alternative battery chemistries beyond lithium-ion, such as aluminum-ion batteries (AIBs). In this work, a set of novel gel-polymer electrolytes (GPEs) based on poly ethylene oxide (PEO) host polymer have been synthesized and characterized by electrochemical impedance spectroscopy and DC polarization techniques. Aluminium sulphate ($\text{Al}_2(\text{SO}_4)_3$) is used as the ionic salt to get mobile ions within the polymer matrix. The optimized 8PEO10 $\text{Al}_2(\text{SO}_4)_3$ -40EC-42PC (wt. %) GPE composition showed an ambient temperature ionic conductivity of $2.54 \times 10^{-4} \text{ S cm}^{-1}$. Ionic conductivity versus inverse temperature variation showed Arrhenius behavior with almost same activation energies of 0.15 eV for all the compositions studied in this work. DC polarization test on SS/GPE/SS configuration showed that the highest conducting composition is dominantly an ionic conductor ($t_{\text{ion}} \sim 0.99$) with negligible electronic conductivity, which is highly needed to avoid short circuits within the cell.

Keywords: *Aluminum-ion batteries, Gel-polymer electrolytes, electrochemical impedance spectroscopy, ionic conductivity, DC polarization.*

SEA SURFACE TEMPERATURE FLUCTUATIONS AROUND THE SEYCHELLES CRW MAHE SITE ON SEYCHELLES ISLAND, THROUGHOUT A 25-YEAR PERIOD (1998–2022), CONSISTING OF CORAL REEF ECOSYSTEMS

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Abstract - The increase in sea surface temperature caused by global warming is one of the major threats to coral reefs. The Republic of Seychelles is one of the world's most isolated and aesthetically pleasing groups of islands, and it has coral beaches. Therefore, this study was designed to study the fluctuation of inter-annual and intra-annual sea surface temperature from 1998 to 2022 over the most prominent coral reef in the Seychelles, the CRW Mahe Site coral reef. The data was gathered using the Coral Health and Monitoring Program Portal online database, which provides daily data from the fixed sea surface temperature sensor of the relevant reef. There was an annual average sea surface temperature trend increasing by 0.02 °C per year. The maximum and minimum monthly average sea surface temperatures recorded in April and August were 29.74°C and 26.075°C, respectively. The maximum and minimum yearly average sea surface temperatures recorded in 2019 and 2000 were 28.53°C and 27.39°C, respectively. The maximum yearly positive and negative anomaly sea surface temperatures recorded in 2019 and 2000 were 0.54 °C and -0.59°C, respectively. Comparatively, high positive yearly anomalies were recorded in 1998 (0.26°C), 2007 (0.24°C), 2009 (0.23°C), 2015 (0.39°C), 2016 (0.27°C), 2019 (0.54°C), and 2020 (0.48°C) years. El Niño, La Niña, Indian Ocean Dipole, and global warming all affect the region's usual yearly pattern of sea surface temperature variations. As a result, coral reefs can face thermal stress, which could cause coral bleaching and decrease the ecosystem's health.

Keywords: *Seychelles Island; coral reef; sea surface temperature; anomaly; average*

YOUTH PARTICIPATION IN PEACE BUILDING: A STUDY BASED ON KUCHCHAWELI DIVISION UNDER THE TRINCOMALEE DIVISIONAL SECRETARY

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Abstract - Peace building is a long-term process. Today's society is plagued by sectarianism, violence, discrimination, economic inequality, etc. The participation of youth is an important one in the process of peace building. Based on that, the research examines the participation of youth in building peace in the Kuchchaweli division under the Trincomalee divisional secretary. Conflicts and violence based on ethnic discrimination can be observed in most countries of the world. Sri Lanka is a good example of diversity and ethnic conflict in South Asia. Sinhalese, Tamil, and Muslim ethnic groups are living in our country along with some ethnic groups. Throughout Sri Lanka's history, inter-ethnic conflicts and violence have continued. Such issues have created divisions among multiracial communities. The Sri Lankan government has created many organizations to establish ethnic unity nationally and regionally and is carrying out many projects through them. However, it is an obvious fact that complete ethnic unity could not be established among the people of Sri Lanka. In this study, the focus is on the peace building activities among the multi-ethnic people of the Kuchchaweli division of Trincomalee district and the contribution of the youth for it. The main purpose of this study is to investigate the way ethnic harmony is seen among the people of the region and the activities carried out by the multiracial communities and the challenges they may face during it. Has harmony been built through the integration of youth activities? This research is based on qualitative research constituting observation, interview, and direct discussions to collect data from 50 youth representing different villages that were randomly selected from the Kuchchaweli division in Trincomalee. To understand the role of youth in peace building, it is necessary to identify the perspectives, activities, and challenges of youth. Cultural superiority, casteism, and religious orientations among rural youth also have a great impact on rural youth in peace building.

Keywords: *pluralism, socialization, Youths*

TRANSACTIONAL LEADERSHIP STYLE AND EMPLOYEE JOB SATISFACTION

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Abstract - Leadership can be defined as the art of inspiring a group of people to work toward shared objectives and maximize their individual potential. It is a tool that people can use to motivate and advance both themselves and other people. There are many different ways that modern leadership ideologies and work satisfaction interact. In contrast to transformational or laissez-faire leadership, transactional leadership, according to extensive research, promotes better levels of job satisfaction. In the divisional secretariats of the Nuwara-Eliya District, this study sought to examine the effect of transactional leadership style on job satisfaction among government employees. A standardized questionnaire was used to collect data from 150 respondents, which SPSS was then used to analyze. To evaluate the major impact of leadership style on job satisfaction, regression analysis was used. The results showed that 58.2% of the variation in job satisfaction was significantly explained by transformational leadership. Furthermore, a favorable association between transactional leadership style and job satisfaction was found. These results highlight the role that leadership style plays in determining job satisfaction among public servants working in divisional secretariats. In order to gain a deeper understanding of the underlying mechanisms and boundary conditions governing this relationship, the study suggests future research areas, offering useful guidance for effective leadership techniques and worker wellbeing.

Keywords: *Transactional Leadership Style, Employee Job Satisfaction*

**INFLUENTIAL FACTORS ON ENVIRONMENTAL ACCOUNTING
PRACTICES AS A PERSPECTIVE OF HOTELS IN SRI LANKA
(SPECIAL REFERENCE TO EASTERN PROVINCE)**

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Abstract – for almost all sectors worldwide to take measures to reduce their environmental impact. These practices, in turn, resulted in companies incorporating the environmental activities they undertake in their reports, thus coining the term “Environmental Accounting (EA)”. Purpose - This research article aims to identify the factors which help to implement the environmental accounting concept for the eastern province hotel industry by examining selected hotels' perceptions of the level of awareness, hotel-related factors, incentive level & availability of qualified human resources. Methodology - The quantitative method was followed in the study. The primary data were collected by sharing online questionnaires among the top and middle employees in the hotel of the eastern province of Sri Lanka. Many actions were taken in the data collection process to improve validity and reliability. The data gathered were analysed using the SPSS software. The study population will be all hotels in the Eastern province, which is hotels total number is 382 & using a sampling cluster technique to divide the population into groups. Moreover, random convenience random sampling was used to select the samples from the group. The study engages a structured questionnaire to acquire selected hotels' views about challenges and barriers to adopting environmental accounting in the hotel industry in the eastern province. And used correlation and regression analysis to analyse the data. Moreover, this study helps to identify which factors help more to implement environmental accounting. This study uses PCA allows for easy data investigation to understand the key variables. Findings – The results indicated that the level of awareness 42.9%, hotel-related factors 24.5% & availability of qualified human resources 16.2% positively impact adopting environmental accounting in hotels of the eastern province of Sri Lanka. The findings of the study indicate that the influential factors have a positive influence on implementing environmental accounting practices in hotels in the eastern province. The results related to the relationship of LA ($r= 0.655$), HRF ($r=0. 0.495$) & AQHR ($r= 0.403$). The most influential factor is identified using linear regression, level of awareness has the most substantial impact, and what government incentives have no impact and relationship on EA implementation in hotels in the eastern province.

Keywords: *Environmental accounting, Incentives, Level of awareness*

MODEL ML: AN AUTOMATED PLATFORM FOR PRECISE AND EFFICIENT MACHINE LEARNING MODEL DEVELOPMENT

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Abstract - In this paper, we introduce the "Model ML" platform, an innovative and automated solution with the primary objective of democratizing the development of machine learning models. This platform is tailored to benefit organizations and individuals who may not have direct affiliations with the machine learning and AI domain. It achieves this objective through the integration of multiple algorithms and the provision of an intuitive user interface. Machine learning (ML) and artificial intelligence (AI) have gained widespread use in diverse fields such as finance, marketing, and data analysis. However, the high cost of computing resources and the scarcity of expertise in data cleaning, feature selection, model selection, and hyper parameter optimization have hindered the adoption of machine-learning applications by novices, students, and small organizations. Although AutoML (Automated Machine Learning) platforms have emerged to simplify the process of developing machine learning models, their technical complexity and lack of user-friendly interfaces present a significant challenge for most users. This paper elucidates the strategies to surmount the mentioned difficulties by designing an automated platform for developing machine learning models, namely Model ML, as a web and mobile application. The proposed platform encompasses several salient attributes: user-friendly interfaces, dataset encoding, tailored model training, statistical analysis, and data visualization for personalized input data, instant model testing using user interfaces, streamlined workflows, and transparency. In addition, it incorporates a leaderboard function that facilitates the assessment of the algorithms utilized during training, as well as the option to export trained models in various formats and access pre-trained machine-learning models commonly employed in the field. As a result, individuals lacking extensive programming skills can construct precise and efficacious models with greater adaptability.

Keywords: *Algorithm Selection, Artificial Intelligence, AutoML, Hyper parameter Optimization, Machine Learning,*

EMMA - EMPATHETIC ARTIFICIAL INTELLIGENT AGENT FOR COMPANIONSHIP

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Abstract - Artificial Intelligence (AI), along with Natural Language Processing (NLP), has made a revolutionary impact on technology in recent years. The usability of Large Language Models (LLMs) has become a primary focus among enthusiasts. However, without sophisticated computational power and sufficient finances, LLMs are restricted from being used by individual developers. This paper examines how empathy can be embedded into LLMs. The implemented model will influence the user's mentality in a positive manner by exploiting the findings of Cognitive Behavioral Therapy (CBT). The approach taken to conquer this goal consists of (1) prompt-engineering methods, which customize and automate the generated prompt with the intention of including prompt-based learning opportunities for the model, and (2) a supervised model to enrich the context of the conversations. Thorough comparisons, along with the experimental processes carried out, are discussed here. Finally, it's factually proven that this strategic, intuitive approach towards the archival of this goal could lead to greater success, shining light on a new perspective in the field of NLP.

Keywords: *AI, NLP, LLM, Sentiment Analysis, CBT*

INTERNET OF THINGS: AN OVERVIEW

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Abstract - The Internet of Things (IOT) refers to the billions of physical biases around the world that are now connected to the internet, all connecting and participating in data. Connecting up all these different objects and adding detectors to them adds a position of digital intelligence to bias that would enable them to communicate real-time data without involving mortal beings. The IOT is making the fabric of the world around us smarter and more responsive, incorporating the digital and physical worlds for researchers. This research is the most suitable for today. The researcher would like to conduct this research and gain new knowledge about the IOT world. There is a link between emerging technologies and IT devices. IOT has become a popular technology in the new era. This research explains the rationale behind the utilization of technology. It involves a qualitative study to help to understand the opinions and perceptions towards the use of IOT devices that are available on the mobile devices, including smart phones and laptops. IOT will be the major technology that changes the world in the near future.

Keywords: *Internet of Things, Machine to Machine (M2M), Internet of Underwater Things (IOUT), Internet of Underground Things, Internet of Battlefield Things (IOBT), Internet of Space Things (IOST), Internet of Nano Things (IONT).*

**EVALUATION OF PROTEIN AND LIPID OXIDATION OF
OREOCHROMIS NILOTICUS HARVESTED FROM
HADAPANAGALA RESERVOIR WHICH WERE STORED UNDER
CHILLED TEMPERATURE (4-10 °C)**

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Abstract - The study investigated the effects of chilled storage (4-10°C) over a period of seven days on protein and lipid oxidation in Nile tilapia (*Oreochromis niloticus*) harvested from Hadapanagala reservoir. Fish samples (250 ± 50 g) were harvested and stored at 4-10°C for 07 days. Protein oxidation was assessed by analyzing carbonyl concentration (nmol/mg protein) and SDS- PAGE analysis while lipid oxidation was assessed by analyzing malonaldehyde concentration (mg MDA per kg of fish) and antioxidant capacity (%). Freshness indicators, hypoxanthine proportion and pH values were also measured. According to data, there were significant differences in carbonyl content, malonaldehyde concentration and antioxidant capacity with different time periods of storage temperature condition at 4-10°C (P<0.05). Carbonyl content which was the protein oxidation indicator was reached to its maximum from the first day reading (5.41 ± 0.26) nmol/ mg protein to (7.87 ± 0.11) nmol/ mg protein on the seventh day while antioxidant capacity of the samples was reached its minimum from the first day reading (68.82 ± 3.28 %) to (18.82 ± 5.14 %) on the seventh day indicating the oxidation. These findings lead to conclude that storage temperature time period have a significant effect on oxidation of proteins and lipids hence preserving fish meat at 4-10°C for longer time periods is not very effective to in the terms of preserving of nutrients and extending shelf life.

Keywords: *Protein oxidation; Lipid oxidation; Nile tilapia (*Oreochromis niloticus*); Carbonyl concentration; Malonaldehyde concentration*

EVALUATION OF PROTEIN AND LIPID OXIDATION IN YELLOWFIN TUNA LOIN (THUNNUS ALBACARES) STORED UNDER REFRIGERATED TEMPERATURE (4 °C)

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Abstract - Tuna fish is the most popular seafood dish in the world. They contain high amounts of nutrients such as protein and lipids. Within the storage time period and processing, postharvest changes take place. This study aims to evaluate the changes in protein and lipid content stored under refrigerated temperature (4 °C). After receiving the tuna fish samples, they were cut into pieces and stored under the refrigerated condition. After storing the 25 g of sample at day 01, day 03, day 05, and day 07 were analysed for protein oxidation using DNPH assay, lipid oxidation using TBARS and, DPPH. To observe the change of pH, pH test was done. 2,4-Dinitrophenylhydrazine test was used for the identification of changing carbonyl content since the protein oxidation and they were 20.359 ± 0.592 nmol/mg, 79.744 ± 0.001 nmol/mg, and 5.291 ± 0.590 nmol/mg respectively on day 1, 5, 7. There was a significant difference between these results with storage ($P < 0.05$). The storage time period, there was no significant difference between these results of 2,2-Diphenyl-1-picrylhydrazyl values ($P > 0.05$). The pH values of the sample within the storage time period, the results were Day 01 = 6.13 ± 0.005 , Day 03 = 6.10 ± 0.015 , Day 05 = 6.24 ± 0.070 , and Day 07 = 6.29 ± 0.030 and had a significant difference with the storage ($P < 0.05$). As conclusion there is a significant change in the protein oxidation and no change in lipid oxidation in tuna fish under refrigerated conditions for 7 days.

Keywords: *Protein oxidation, Lipid oxidation, Post-harvest changes, DNPH assay, DPPH assay, TBARS assay, pH test.*