

Contents

Organizing Committee	i
Message from the Vice Chancellor	iii
Message from the Dean	iv
Message from the Conference Chair	v
Keynote Address by Professor Chihaya Adachi	vi
Keynote Address by Professor Devaka K. Weerakoon	vii

Computer Science

Plenary Speech by Mr. Pubudu Liyanage	1
---------------------------------------	---

Session: Cloud Computing & Software Engineering

Analyzing and Optimizing the Performance of Big Data Platform: A Case Study based on Apache Hadoop MapReduce Framework <i>J.H.R.P. Jayamaha and K.P.N. Jayasena</i>	2
Multi-Objective Optimization of Fog-based Remote Healthcare Monitoring System for Covid-19 Patients <i>L.I.A. Hewavithana and K.P.N. Jayasena</i>	3
Predictive Autoscaling for Containerized Microservices in Cloud Infrastructure <i>W.S.M. Fernando and K.P.N Jayasena</i>	4
E-wallet for Youth: A Secure and Sustainable System for Financial Transactions <i>T.S.J De Silva and S. Vasanthapriyan</i>	5
Detecting the Code Clone Density and Measuring the Complexity of Source Code Using SonarQube <i>T. Vijayanandan, B.T.G.S. Kumara, and K. Banujan</i>	6

Session: Machine Learning

Data Mining-based Landslide Vulnerability Prediction System <i>D.M.D.S.K. Dissanayaka and A.M.C. Malkanthi</i>	7
Using Twitter Data for Assessing Home Violence During the Covid-19 Pandemic <i>S. Adeeba, B.T.G.S. Kumara, and K. Banujan</i>	8
Machine Learning-based Approach for Predicting Covid-19 Deaths <i>I. Mohamed, B.T.G.S. Kumara, and K. Banujan</i>	9

Generative Adversarial Network-based Data Augmentation for Papaya Disease Detection using Deep Learning <i>K. Kosala, K. Banujan, B.T.G.S. Kumara, and T. Kovarthanan</i>	10
Identification of the Type of the Respiratory Failure by Analyzing the ABG Test Results Using Machine Learning <i>S. Kajanana, B.T.G.S. Kumara, K. Banujan, and S. Prasanth</i>	11
Artificial Neural Network-based Approach to Predict the Soil Fertility <i>A. Vithujan, K. Banujan, B.T.G.S. Kumara, and S. Prasanth</i>	12
Future Prediction and Analysis of Tea Export in Sri Lanka in Terms of Influencing Factors <i>R. Laveena and U.P. Kudagamage</i>	13
Face Mask Detection System using Neural Network Architecture <i>A.M.S.M.C.K.B. Attanayaka and A.M.C. Malkanthi</i>	14
Identification of a Machine Learning Architecture for Potato Disease Classification Using Leaf Images <i>M.H. Gayantha, W.M.C.J.T. Kithulwatta, and R.M.K.T. Rathnayaka</i>	15
Multilayer Perceptron-based Source Code Classification <i>I. Mohamed, B.T.G.S. Kumara, and K. Banujan</i>	16
Classification of Telecommunication Customers based on Profitability: A Supervised Machine Learning Approach <i>S. Mishoba, K. Banujan, S. Prasanth, and B.T.G.S. Kumara</i>	17
Predicting the Rainfall and Crop Price to Select Suitable Crop: A Case Study in Badulla District <i>K.P.S.M. Nandasiri, K. Banujan, B.T.G.S. Kumara, S. Jayasinghe, E.M.U.W.J.P. Ekanayake, and S. Prasanth</i>	18
Designing an Emotionally Realistic Chatbot Using Deep Learning <i>W.P.N. Subhashini, R.M.K.T. Rathnayaka, and L.L.G. Chathuranga</i>	19
Product Recommendation System using Market Basket Analysis and Emoji Based Feedback <i>M.G.M.S.P. Gamage, R.M.K.T. Rathnayaka, and W.A. Sanjeeva</i>	20
Public Perspective on the Adverse Effects of Covid-19 Vaccines: A Study based on Social Media <i>K.R.S.N. Kariyapperuma, K. Banujan, B.T.G.S. Kumara, and P.M.A.K. Wijeratne</i>	21

Natural & Applied Sciences

Plenary Speech by Dr. Lakshitha Pahalagedara	22
--	----

Session: Food & Nutritional Sciences

Formulation and Quality Evaluation of Palmyrah (<i>Borassus flabellifer</i>) Pulp Incorporated Vegetable and Yeast extract <i>N. Outschoorn, N.Y.D.S. Weerakkody, M.C.N. Jayasooriya, and M. Subajini</i>	23
Development and Quality Analysis of Coconut Milk (<i>Cocos nucifera</i> L.) Based Palmyrah (<i>Borassus flabellifer</i> L.) Fruit Pulp Drink <i>S. Arjana, S. Thuraisingam, T.A.K.A. Thennakoon, J.W.A. Sajiwanie, and S. Srivijendran</i>	24
Extraction and Modification of Palmyrah Tuber (<i>Borassus flabellifer</i> L) Starch and Its Applicability as a Thickener <i>S. Darsiga, N. Sobini, and T.C. Kananke</i>	25
Evaluation of Functional and Antioxidant Properties in <i>Alocasia macrorrhiza</i> Corm Flour <i>S.Y.S.M. Senevirathna, L.J.P.A.P. Jayasooriya, and W.S.M. Senevirathne</i>	26
Investigation of Total Phenolic, Total Flavonoid Contents and Antioxidant Activities of Karankoku (<i>Acrostichum aureum</i> L.) Under Different Extraction Conditions <i>W.M.A.N. Wijekoon and A.Y.L. Fernando</i>	27
Physicochemical, Phytochemical and Microbiological Analysis of Bottled Tender Jackfruit (<i>Artocarpus Heterophyllus</i> Lam.) in Different Brine Solutions During Storage <i>A.G.R. Athukorala, R.S. Sabaragamuwa, D.N. Hettiarachchi, S.M.K. Rathnayake, H.M.D.K. Jayarathne, D.L.C.N. Hitigedara, A.W.T.U. Dharmathilake, and R.A. Wijerathne</i>	28
The Effect of Packaging Materials and Storage Temperatures on Shelf Stability of RDB Palm Olein <i>W.L.L. Jayamali, R.S. Sabaragamuwa, and S.H. Jayarathne</i>	29
Nutritional and Antioxidant Properties of Sri Lankan Tropical Almond (<i>Terminalia catappa</i> L.) Nuts <i>P. Bandara, L.J.P.A.P. Jayasooriya, and M. Senevirathne</i>	30
Formulation of Healthy Breadsticks Using Palmyrah Resources and Garlic <i>V. Thivya, B. Anulushy, K.M. Somawathie, and S. Srivijeindran</i>	31
Formulation of a White Wine from Carambola (<i>Averrhoa carambola</i>) Fruit and Evaluation of its Physicochemical Characteristics <i>P.V.I. Sanduni and W.S.M. Senevirathne</i>	32
Case Study on Detection of <i>Salmonella</i> spp. in Market Available Ice Creams at Jaffna Peninsula, Sri Lanka <i>M.S.A. Naajee, R. Pathmaraj, and R.M.U.S.K. Rathnayake</i>	33

Formulation and Quality Analysis of Palmyrah (<i>Borassus flabellifer</i>) Pulp Based Bread Spread <i>R. Vithujan, A.Y.L. Fernando, and S. Mahilrajan</i>	34
Development of Jackfruit (<i>Artocarpus heterophyllus</i>) and Mung Bean (<i>Vigna radiate</i>) Based Instant Healthy Soup Mix Powder <i>B.M.S.N. Basnayaka and T.C. Kananke</i>	35
Evaluation of the Capability of Using Jackfruit (<i>Artocarpus integer</i>) Peel as a Low-cost Raw Material in Waffle Cone Production <i>W.M.D.N. Wijekoon and T.C. Kananke</i>	36
Consumer Awareness, Perceptions and Preferences Towards Micronutrient Fortified Foods <i>M.D.D.S. Gunawardana, M.M.K.D. Ranasighe, W.M.D.N. Wijekoon, and T.C. Kananke</i>	37
Investigation of Total Phenolic, Flavonoids and Antioxidant Activity of Miyana-Dalu (<i>Duplazum esculentum</i>) Under Different Extraction Conditions and Cooking Methods <i>W.M.D.N. Wijekoon and R.S. Sabaragamuwa</i>	38
Physical Sciences & Technology	
Evaluation of Cross-Contamination of Unlined Metal Cans with Fire Debris Containing Petrol <i>M.M.D. Jayarathna, S.D.A. Sandanayaka, and N.I.K. Fernando</i>	39
Identifying Intrinsic Parameters Using Orbital Properties of Cataclysmic Variable Stars <i>P.R.S. Tissera, N.I. Medagangoda, N.S. Bandara, and G.M.L.P. Aponsu</i>	40
Application of Wheatstone and Maxwell's Bridges to Detect Security Fence Breakdown Positions <i>W.G.C.M. Kulasooriya, P.D. Buddika, R.M. Weerasighe, J.A.D.M. Dharmathilaka, and W.T.L.S. Fernando</i>	41
Further Enhancement of Physical Properties of Unglazed Traditional Cookware <i>P.H. Sooriyaarachchi, M.H.T. Dulaj, J.A.D.M. Dharmathilaka, H.M.B.I. Gunathilaka, R.C.W. Arachchige, H.N.M. Sarangika, and I.R.M. Kottegoda</i>	42
Utilization of Polyethylene Terephthalate Dust and Wastewater Sludge as Eco-Brick Materials <i>P.L. Wijesiriwardhana, S.K. Gunathilake, H. Wijesekara, and A. Rathnayake</i>	43
Binding of Amoxicillin to Hemoglobin <i>A.W.P. Rasangani, M.G.A.N. Perera, and M.N. Wickramaratne</i>	44
Determination of Persistence Capacity of Kerosene on Different Fabrics <i>W.S.D. De Mel, L.A.W.K. Dhanayaka, and H.S.M. Soysa</i>	45

Effect of Different Roasting Temperatures on the Quality of Instant Coffee Cubes Production from <i>Coffea robusta</i> <i>M.H.T.K. Chandrasiri, T.N. Hettiarachchi, and K.B. Wijesekara</i>	46
Detection of Adulteration in Food Using Spectrometric Sensor <i>T.M. Withanage, P.D. Buddika, R.M. Weerasighe, R.M. Dharmadasa, and G.M.L.P. Aponsu</i>	47
Temperature Guidance to Utilize the Rice Production of Specific Districts in Sri Lanka <i>W.M.A. Tharinda, T.M.N. Peiris, and N.R.A.M. Ruwangika</i>	48
Session: Natural Sciences & Environmental Conservation	
Potential of School Children as Active Participants in Biodiversity Conservation; A Case Study from Bandarawela Education Zone <i>R.M.P.P.S. Deeptha, E.P. Kudavidanage, and S.J. Perera</i>	49
Taxonomy of Lichenicolous Fungi Isolated from Selected Lichen Species in Belihuloya <i>D.H.M. Dangalla, R.G.U. Jayalal, and N.N. Wijayawardene</i>	50
Impacts of Clear-cutting in a Pinus Plantation within the Nonpareil Area of Belihuloya, in the Southern Intermediate Zone, Sri Lanka <i>J.P.R. Ashen, R.G.U. Jayalal, E.P.N. Udayakumara, and N.R.P. Withana</i>	51
Estimation of Soil Erosion in Samanalawewa Watershed and its Sensitivities to Land Use and Climate Variables <i>W.D.U. Premarathna, E.P.N. Udayakumara, and D.N.S. Wanniarachchi</i>	52
Effects of the Fungicide Tebuconazole on Leaf Litter Decomposition in Agricultural Streams: A Microcosm Study <i>W.A. Ireshika, J.M.C.K. Jayawardana, and R.G.U. Jayalal</i>	53
A Case Study of the Waste Flow Analysis and Resource Optimization Strategies in Selected Textile and Apparel Industries in Export Processing Zone - Biyagama, Sri Lanka <i>S.R.G.R. Madushan, D. Lekamge, and L.G.L.M. Edirisinghe</i>	54
Exotic and Invasive Alien Species of Plants in the Sabaragamuwa University Nature Reserve <i>D.H.M. Dangalla, W.A. Ireshika, W.D.U. Premarathna, D.A.S.D.K. Wijewardena, H.M.A.A. Herath, S.J. Perera, and R.G.U. Jayalal</i>	55
Diversity of Fungal Taxa Inhabiting on Ground Litter of <i>Pinus caribaea</i> Plantations and Adjacent Vegetation in Selected Locations of Belihuloya, Sri Lanka <i>D. Bandara, R.G.U. Jayalal, N.N. Wijayawardene, and N.R.P. Withana</i>	56
Isolation of Profenofos Degrading Bacteria from Surface Water in Badulla District, Sri Lanka <i>D.A.S.D.K. Wijewardena, S.K. Gunathilake, H.S.M. Soysa, and R.G.U. Jayalal</i>	57

Assessment of Water Quality in Marine Bathing Sites in Galle District, Sri Lanka
K.K.C. Livera, S.K. Gunathilake, J.M.C.K. Jayawardana, A.J.M. Gunasekara, and L.D. Rupasingha 58

Utility of Life Cycle Assessment (LCA) for Sustainable Textile Industry
G. Paranamana, D. Lekamge, and U. Arjeevani 59

Evaluation of Success Rate of Trace DNA in Different Sample Types
S.T. Upeksha, H.A.B.M.D. Weththasinha, and L.R.T. Perera 60

Sports Sciences & Physical Education

Plenary Speech by Professor M. Elayaraja 61

Session: Physical Education & Sports - I

The Mental and Physical Health of the Sri Lankan Professional Esports players
S.H.A.H.D. Kalupahana and H.A.C.S. Hapuarachchi 62

Mental Training Condition of Female School Carrom Players in the Badulla Education Zone
K.R.M.M.C.K. Bandara, M.R.M.A. Jayasinghe, and H.M.M.B. Herath 63

Effect of Selected Yoga Practices on Mental Health Among Mothers in the Third Trimester of Pregnancy
N.K.K. Anuradha and S. Joniton 64

The Impact of Yogic Therapy on Cardiovascular Disease Patients
R.M.A.D. Rasnayaka and S. Joniton 65

Impact of Playing Chess on the Development of Cognitive Skills in Schools Students Under the Chess Association of Ampara District
A.M.S. Ahamed and S. Joniton 66

Session: Sport Sciences & Management - I

Relationship Between Selected Anthropometric Parameters and 50m Freestyle Swimming Time in Teenage Swimmers
R.M.U.S. Sugathadasa, M.R.M.A. Jayasinghe, and R.M.K.T. Rathnayaka 67

Relationship Between Quadriceps Angle, Body Parameters, and Occurrence of Lower Extremity Injuries of Sri Lankan National Level Athletes
L.W. Rashmika and L.R.N.D. Weerarathne 68

The Effect of Movement Pattern in Flight Phase for Long Jump Performance
J.P.S. Jayaneththi and A.W.S. Chandana 69

The Comparison of Different Training Methods to Enhance the Body Composition of Recreationally Trained Male Athletes
P.G.C.B. Pitaduwagama and S. Othalawa 70

Effect of Plyometric Training Volume to Develop the Explosive Power on Horizontal Jump Athletes <i>S.V. Mark, S. Othalawa, and L. Sharmilan</i>	71
Session: Physical Education & Sports - II	
Development of an Assistive Instrument to Batting Practices and to Improve Hand Eye Coordination in Baseball <i>T.M. Nusky and S. Joniton</i>	72
Contribution of Physical Activities to Health-Related Quality of Life of Stroke Survivors <i>N.R.N. Daluwatta, D.S.L. Perera, L.R.N.D. Weerathna, and W.A.A.R. Weerasinghe</i>	73
Comparison of Sri Lankan Traditional Kandyan Dance Leg Exercises and Selected Sport Exercises on Leg Power Development <i>L.M.M.U. Lansakara and W.A.W.S. Rupasinghe</i>	74
Adherence of Physical Activity Recommendations and Socio-Demographic Correlates in Older Adults in Kandy District <i>B.G.N.T. Wijerathna and W.A.W.S. Rupasinghe</i>	75
A Study of Emotional Intelligence of High-Performance Athletes in Sri Lanka <i>J.A.D.M. Perera, T.P. Liyanage, and K.T. Rathnayake</i>	76
A Critical Analysis of Issues and Challenges of Sport and Physical Education in Sri Lanka <i>G. Athukorala and S. Joniton</i>	77
The Effect of Endurance Training on the Sri Lankan National Squash Men Players <i>J.F.J. Feldano and A.W.S. Chandana</i>	78
The Parents' and Girls' Perceptions of Sports Participation in the Jaffna <i>T. Thanujan, S. Shreeharan, and V. Jasminan</i>	79
Session: Sport Sciences & Management - II	
The Impact of the Angular Displacements of Torso, Forearm, Arm and Hand on Serving Speed of Wheelchair Tennis Service <i>Y.U.D. Wijesinghe and A.W.S. Chandana</i>	80
The Relationship Between Body Composition and Strength Parameters of the Sri Lanka Navy Male Wrestling Team <i>B.M.D.C. Gunarathana, S. Othalawa, and S.J.M.M.J. Samarakoon</i>	81
Comparison Between the Three Phases of Menstrual Cycle on the Dietary Habits and Selected Physical Fitness Components of National-level Netball Players <i>M.H.A.R. Amaradasa, T.S.H. Perera, D. Senevirathne, and R.M.K.T. Rathnayaka</i>	82

Investigation of Bio Motor Abilities and Body Composition of Over 20 Age Female Athletes in Kandy District <i>K.D.P. Kumarage and W.A.W.S. Rupasinghe</i>	83
Relationship Between Health-Related Physical Fitness and Body Composition of Retired Players of the National Rugby Team, Sri Lanka <i>D.C.S. Jayawickrama and S. Othalawa</i>	84
National Athletes' Perception of Their Coaches' Behaviour and Skills in Sri Lanka <i>T.W.A.N. Darshika and W.A.W.S. Rupasinghe</i>	85
Panel of Reviewers	86
Author Index	88

