

Conference Program

5th April 2016	Conference	
Day 1	Track1	Track2
8:30am - 9:00am	Registration	
9:00am - 10:30am	Big Data and Software Engineering (1)	Micro/Nano Electro Mechanical Systems, Mechatronics, and Micromechatronics
10:30am - 11:00am	ERU Symposium Poster Session and Tea	
11:00am - 12:30pm	Big Data and Software Engineering (2)	Telecommunication Systems
12:30pm - 1:30pm	Lunch (on your own)	
1:30pm - 3:00pm	Biomedical Engineering and Soft Computing	Mechanical Engineering Systems
3:00pm - 3:30pm	ERU Symposium Poster Session and Tea	
3:30pm - 5:30pm	Inauguration and Keynotes by Prof. Monte Cassim and Prof. Saman K. Halgamuge	
6:00pm - 7:00pm	Banquet (for registered authors and invitees)	

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6th April 2016	Conference	
Day2	Track3	Track4
8:30am - 9:00am	Registration	
9:00am - 10:30am	Civil and Environmental Engineering (1)	Power Systems, Electrical Machines and High Voltage Engineering
10:30am - 11:00am	Tea	
11:00am - 12:30pm	Keynotes by Prof. Karu Esselle and Prof. Jagath K. Samarabandu	
12:30pm - 1:30pm	Lunch (on your own)	
1:30pm - 2:15pm	Civil and Environmental Engineering (2)	Chemical and Process Engineering
2:15pm - 3:00pm	Transport, Logistics and Technology Management	Machine Vision and Image Processing
3:00pm - 3:30pm	Tea	
3:30pm - 5:45pm	Materials Science and Engineering	Robotics and Control
5:45pm - 6.00pm	Closing, Best Paper, Best Poster Awards	

Session Topics

T1S1: Big Data and Software Engineering (1)

T1S1-1 [09:00] Categorizing Food Names in Restaurant Reviews

T1S1-2 [09:15] Machine Learning Approach to Recognize Subject Based Sentiment Values of Reviews

T1S1-3 [09:30] An Automatic Classifier for Exam Questions with WordNet and Cosine Similarity

T1S1-4 [09:45] Support for Traceability Management of Software Artefacts using Natural Language Processing

T1S1-5 [10:00] Cheap Food or Friendly Staff? Weighting Hierarchical Aspects in the Restaurant Domain

T1S1-6 [10:15] Ananya - A Named-Entity-Recognition (NER) System for Sinhala Language

T2S1: Micro/Nano Electro Mechanical Systems, Mechatronics, and Micromechatronics

T2S1-1 [09:00] New MEMS Based Micro Gripper Using SMA for Micro Level Object Manipulation and Assembling

T2S1-2 [09:15] Design and Simulation of MEMS based 5-DOF Tactile Force Sensor

T2S1-3 [09:30] A Novel MEMS Motor Based on Thermal Actuation

T2S1-4 [09:45] Smart Solar Tracking and On-Site Photovoltaic Efficiency Measurement System

T2S1-5 [10:00] Development of a Numerically Controlled Hot Wire Foam Cutting Machine for Wing Mould Construction

T1S2: Big Data and Software Engineering (2)

T1S2-1 [11:00] Model-based Input-adaptive Vectorization

T1S2-2 [11:15] A Visualization and Analysis Platform for Performance Tuning

T1S2-3 [11:30] Reducing Computational Time of Closed-Loop Weather Monitoring (A Complex Event Processing and Machine Learning Based Approach)

T1S2-4 [11:45] PROAASEL: Prospect Theory based Continuous Authentication Attribute Selection Model

T1S2-5 [12:00] Fuel Consumption Prediction of Fleet Vehicles Using Machine Learning: A Comparative Study

T1S2-6 [12:15] Applying Agile Practices to Avoid Chaos in User Acceptance Testing: A Case Study

T2S2: Telecommunication Systems

T2S2-1 [11:00] Open Source Mobile Network

T2S2-2 [11:15] Improved LDPC Decoding Algorithms based on min-sum algorithm

T2S2-3 [11:30] Delta-Sigma Noise Shaping in 2D Spacetime for Uniform Linear Aperture Array Receivers

T2S2-4 [11:45] A 480MHz ROACH-2 FPGA Realization of 2-Phase 2-D IIR Beam Filters for Digital RF Apertures

T2S2-5 [12:00] Performance Investigation of Hybrid ARQ in HSDPA Systems with AMC

T2S2-6 [12:15] Stereo Audio Streaming via Visible Light

T1S3: Biomedical Engineering and Soft Computing

T1S3-1 [13:30] Application of Canonical Correlation Analysis to Study the Influence of Mathematics on Engineering Programs: A Case Study

T1S3-2 [13:45] Potential for Improving Green Roof Functions and Performance through Optimized Irrigation

T1S3-3 [14:00] Robust Algorithm for Objective Hearing

Screening of Newborns Using Automated Auditory Brain-stem Response

T1S3-4 [14:15] Dengue Propagation Prediction using Human Mobility

T1S3-5 [14:30] Support Vector Machine Regression for Forecasting Electricity Demand for Large Commercial Buildings by using Kernel Parameter and Storage Effect

T1S3-6 [14:45] Modeling Website User Behaviors by Combining the EM and DBSCAN Algorithms

T2S3: Mechanical Engineering Systems

T2S3-1 [13:30] A Novel Method to Measure Abrasion of Solid Tires

T2S3-2 [13:45] Limiting Value Of Reynolds Averaged Simulation In Numerical Prediction Of Flow Over NACA4415 Airfoil

T2S3-3 [14:00] Effect of Minimum Quantity Lubrication (MQL) Aerosol Temperature on Tool Life in Machining AISI P20 and D2 Steels using Coated Tungsten Carbide Tool Inserts

T2S3-4 [14:15] Numerical Simulation of the Moisture Diffusion in Copra Drying Process

T2S3-5 [14:30] Topology Optimization to Improve Structural Efficiency of 5000 lb Over-Center Buckle

T2S3-6 [14:45] Analysis and Optimization of Cyclone Separators by Using RANS

T3S1: Civil and Environmental Engineering (1)

T3S1-1 [9.00] Selection of Nominated Subcontractors in Commercial Building Construction in Sri Lanka

T3S1-2 [9.15] Numerical Modelling of the Behaviour of Model Shallow Foundations on Geocell Reinforced Sand

T3S1-3 [9.30] Computation of Nearshore Wave Set-up due to Wind Waves Generated by Tropical Cyclones Landfalling in Sri Lanka

T3S1-4 [9.45] Modelling of Early Age Tensile Strain Development of Fresh Concrete

T3S1-5 [10.00] Porous Pavements Suspended Solids Removal

T3S1-6 [10.15] Comparison of Two Surface Treatment Methods to Reduce Water Absorbtion of Recycled Coarse Aggregates

T4S1: Power Systems, Electrical Machines and High Voltage Engineering

T4S1-1 [9.00] Power System Simulator- A Teaching Tool (Protection Integration)

T4S1-2 [9.15] The Impact of Climate Change on Wind Energy Generation in Mannar-Sri Lanka

T4S1-3 [9.30] Wireless Power Transmission for Multiple Devices

T4S1-4 [9.45] Capacitance and Tan δ Measuring Equipment for High Voltage Insulation (Modelling and Simulation)

T4S1-5 [10.00] Smart Energy Tracking System For Domestic Consumers

T4S1-6 [10.15] Design and Construction of an Automated Test Bench for MCB Testing

T3S2: Civil and Environmental Engineering (2)

T3S2-1 [13:30] Developing A Mud Block For Load Bearing Wall With 10% Cement And Low Fines Content

T3S2-2 [13:45] Experimental study on steel fibre reinforced concrete for G-30 concrete

T3S2-3 [14:00] Factors Influencing Procurement Adoption in Construction (Building vs Infrastructure Projects)

T4S2: Chemical and Process Engineering

T4S2-1 [13:30] Developing a Technological Process to Weave Cotton Fabrics on Water Jet Loom

T4S2-2 [13:45] Optimization of Mashing Process in Beer Production Using Rice as an Adjunct

T4S2-3 [14:00] Biodegradation of natural rubber latex by a novel bacterial species isolated from soil

T4S2-4 [14:15] Life Cycle Assessment of Rice Processing in Sri Lanka: Modern and Conventional Processing

T3S3: Transport, Logistics and Technology Management

T3S3-1 [14:15] Effective Urban Transport Planning using Multi-modal Traffic Simulations Approach

T3S3-2 [14:30] The Impact of Transformational and Transactional Leadership Styles on Knowledge Creation in Sri Lankan Software Industry

T3S3-3 [14:45] Defining KPIs to Measure Eco-Sustainable Performance at Container Terminals in Sri Lanka

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T4S3: Machine Vision and Image Processing

T4S3-1 [14:15] A Novel Method and Tool for Detection of Tumors and Tissue Abnormalities

T4S3-2 [14:30] Computer Vision Based Fire Alarming System

T3S4: Materials Science and Engineering

T3S4-1 [15:30] A Numerical Investigation and Experimental Validation on Chip Morphology of Aluminum Alloy 6061 during Orthogonal Machining

T3S4-2 [15:45] Non-destructive Evaluation of Strength Gain of Ordinary Portland Cement Mortar by Ultrasonic Pulse Velocity Method

T3S4-3 [16:00] Extraction and Characterization of Cellulosic Fibers from Sawmill Waste

T3S4-4 [16:15] Non-linear Behaviour of Open-cell Metal Foam under Tensile Loading

T3S4-5 [16:30] Development of Polymer Modified Asphalt using Filler

T3S4-6 [16:45] Use of Surface Modified Silica in Reinforcing Carboxylated Nitrile Rubber Latex

T3S4-7 [17:00] Preparation and Characterization of Cellulose and Hemi-Cellulose Based Degradable Composite Material Using Sugarcane Waste

T3S4-8 [17:15] Hydrophilic Polymers as Protein Removers for Natural Rubber Latex

T4S4: Robotics and Control

T4S4-1 [15:30] Command Governor Adaptive Control for Unmanned Underwater Vehicles with Measurement Noise and Actuator Dead-Zone

T4S4-2 [15:45] Biomimetic Flexible Robot Arm (Design and kinematic analysis of a novel flexible robot arm)

T4S4-3 [16:00] Field Based Navigation for 3D Obstacle Avoidance

T4S4-4 [16:15] MIRob: An Intelligent Service Robot that Learns from Interactive Discussions while Handling Uncertain Information in User Instructions

T4S4-5 [16:30] Outdoor Robot Navigation Using Gmapping Based SLAM Algorithm

T4S4-6 [16:45] Design and Development of an Anthropomorphic Robotic Head with Force Attentive Reflex Actions

T4S4-7 [17:00] Stability Analysis for a Twin Boom H- tail Medium Scale UAV through Simulated Dynamic Model

T4S4-8 [17:15] Design of a Human-like Robot Head with Emotions

T4S4-9 [17:30] Limit Cycle like Asymptotic Dynamics in Feedback Loops with Memory Based Event Triggering

Abstracts of

ERU Symposium 2016

Co-hosted with MERCon 2016

**Poster Session 1, Day 1, 5th April 2016
[10:30am - 11:00am] and
Poster Session 2, Day 1, 5th April 2016
[3:00pm - 3:30pm]**

- P1 - A Simplified Epilepsy Classification Technique Utilizing SVD
- P2 - Short-Term Traffic Prediction with VLR Data
- P3 - Missing Data Imputation using Evolutionary kNearest Neighbor Algorithm for Gene Expression Data
- P4 - Modeling and Forecasting OPEC Reference Basket Crude Oil Prices Using Artificial Neural Networks
- P5 - Human Action Detection using Space-Time Interest Points
- P6 - Identify Whether the User is in a Meeting or not by Using Naïve Bayes Classifier
- P7 - Integrating Context-Awareness with Reminder Tools
- P8 - Automated Optimization and Suggestion of Libraries and Patterns for Software Architectures
- P9 - Fabrication and Characterization of Cu₂ZnSnS₄ Thin Films by Spin Coating

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- P10 -Finding of Ideal Conditions to have a Mass Production of *Azolla pinnata*
- P11 -Bed Shrinkage in Packed Bed Biomass Combustion
- P12 -Non-destructive Evaluation of Strength Gain of Ordinary Portland Cement Mortar by Ultrasonic Pulse Velocity Method samples.
- P13 -Development of a Badminton Shuttlecock Feeding Machine
- P14 -Design and Implementation of a Robot Hand For Service Purposes
- P15 - Use of Dipanalyst 2.0 Software to Analyse Road Cut Slope Failures