## International Conference in Data Science 2023 (ICDS 2023)

### 19<sup>th</sup> & 20<sup>th</sup> December 2023 At Department of Statistics, University of Colombo **Full Schedule**

| Time   | Activity  |  |
|--|---|--|
|  | DAY 1   |  |
| 9.00am -12.00pm  | Workshop # 1<br>Introduction to Explainable AI for Enhanced Transparency in AI<br>Models                                      |  |
| 1.00pm – 4.00pm  | <b>Workshop # 2</b><br>Preserving Privacy in Machine Learning & Future of Information<br>Retrieval with Large Language Models |  |
|  | DAY 2   |  |
| Zoom Link<br>https://zoom.us/j/92625635<br>Meeting ID: 926 2563 5043<br>Passcode: ICDS2023 | 043?pwd=MkFCSFM2ZzAxcjZtSTNIZnp2ZTVnUT09  |  |
| 08.30 am - 08.40 am  | Arrival of guests and lighting the oil lamp   |  |
| 08.40 am – 08.45 am  | Welcome address by the Director CDS – Dr. Dilshani Tissera  |  |
| 08.45 am - 08.50 am  | Address by the Head, Department of Statistics – Dr. Rushan<br>Abeygunawardane   |  |
| 08.50 am – 8.55 am   | Address by the Dean, Faculty of Science – Senior Prof. Upul<br>Sonnadara  |  |
| 08.55 am – 9.00 am   | Address by the Vice Chancellor – Senior Prof. (Chair) H. D. Karunaratne   |  |
| 9.00 am – 09.30 am   | Keynote Speech 1 – Ms. Devini Senaratna   |  |
| 09.30 am – 10.00 am  | Keynote Speech 2 – Prof. David Hunter   |  |
| 10.00 am – 10.15 am  | Mini-hackathon – Final Award Ceremony   |  |
| 10.15 am – 10.45 am  | Keynote Speech 3 – Dr. Rajitha Navarathna   |  |
| 10.45 am – 11.15 am  | Keynote Speech 4 – Prof. Saman Halgamuge  |  |
| 11.15 am – 11.20 am  | Vote of Thanks – Dr. S. D. Viswakula<br>(Co-Chair ICDS 2023)  |  |
| 11.20 am – 12.30 pm  | Refreshments  |  |
| 12.30 pm – 02.30 pm  | Technical Session I   |  |
| 02.30 pm – 03.00 pm  | Break   |  |
| 03.00 pm – 04.30 pm  | Technical Session II  |  |
| 04.30 pm - 04.40 pm  | Vote of Thanks – Dr. C. Priyadarshani (Secretary ICDS 2023)   |  |

## <u> Technical Session I – Track 1</u>

# NLP, Unsupervised Learning and Forecasting

|                       | Co –<br>Chairs  | Dr. G P Lakraj and Dr. S G Dharmarathna   |  |
|-----------------------|---|---|--|
| Session Panel         | Moderators  | Ms. Dilaxiha Yoganathan, Ms. M K D Tharushika   |  |
|                       | Technical<br>Person   | Mr. Kasun Nanayakkara   |  |
| Zoom Link             | https://zoom.us/j/93416737129?pwd=a3E4M1RqekF0YjdUMjlocElNcWlKdz09<br>Meeting ID: 934 1673 7129<br>Passcode: ICDS2023 |   |  |
| Time                  |   | Information   |  |
|                       | Presenter   | T S M A Muthalib  |  |
| 12.30 pm –            | Paper ID  | 53  |  |
| 12.50 pm              | Title   | Analyzing the nuances of supermarket customer behavior for enhanced retail marketing strategies: A case study on customer purchases |  |
|                       | <b>Co-authors</b>   | K.A.D Deshani, Oshada Senaweera   |  |
|                       | Presenter   | D M P Disanayaka  |  |
| 12.50 pm –            | Paper ID  | 40  |  |
| 01.10 pm              | Title   | Deep Learning Model for Lip Synchronization in Sinhala Language   |  |
|                       | <b>Co-authors</b>   | A R Weerasinghe   |  |
|                       | Presenter   | S P P M Sudasinghe  |  |
| 01.10 pm –            | Paper ID  | 35  |  |
| 01.30 pm              | Title   | Predicting the Outcome of T20 International Matches Based on<br>Historical Statistics and Crowd Opinions                            |  |
|                       | <b>Co-authors</b>   | S D Viswakula, G P Lakraj   |  |
|                       | Presenter   | K N W Tennakoon   |  |
| 01.30 pm –            | Paper ID  | 37  |  |
| 01.50 pm              | Title   | Identifying the Frequently Occurring Aquatic Insect Assemblages<br>Using Association Rule Mining Techniques                         |  |
|                       | <b>Co-authors</b>   | M D T Attygalle, P K T N S Pallewatta, M S Kanakarathna   |  |
| 01.50 pm –<br>2.10 pm | Presenter   | B L I Kalpani   |  |
|                       | Paper ID  | 46  |  |
|                       | Title   | Developing a Forecasting Model for the Exports of Ceylon Tea  |  |
|                       | Co-authors  | C H Magalla   |  |

| Presenter M. S. D Perera |            | M. S. D Perera   |
|--------------------------|------------|--|
|                          | Paper ID   | 22   |
| 02.10 pm –               | Title      | An evolutionary keystroke dynamic-based stress detection system<br>through an incremental learning based approach for IT professionals |
| 2.30 pm                  | Co-authors | S V Bartholomeusz, H M Samadhi, Chathuranga Rathnayake,<br>Devanshi Ganegoda   |

## **Technical Session I – Track 2**

# **Computer Vision**

| Session Panel          | Co – Chairs   | Dr. R A B Abeygunawardana and Mr. Oshada Senaweera  |
|------------------------|---|---|
|                        | Moderators  | Ms. Senuri Yasara, Ms. Navoda Hettige   |
|                        | Technical Person  | Mr. Nipuna Suduwella  |
| Zoom link              | https://zoom.us/i/93416737129?pwd=a3E4M1RqekF0YjdUMjlocElNcWlKdz09<br>Meeting ID: 934 1673 7129<br>Passcode: ICDS2023 |   |
| Time                   |   | Information   |
|                        | Presenter   | W M D D B Wijesundara   |
| 12.30 pm –             | Paper ID  | 29  |
| 12.50 pm               | Title   | Skin cancer image classification using Vision Transformer network   |
|                        | <b>Co-authors</b>   | C T Wannige, M K S Madushika, P L A N Liyanage  |
|                        | Presenter   | W M D Nawanjana   |
|                        | Paper ID  | 48  |
| 12.50 pm –<br>01.10 pm | Title   | A Comparative Study of Deep Learning Approaches with<br>Vision Transformers for Multi-Class Dermoscopic Image<br>Classification |
|                        | Co-authors  | G P Lakraj  |
|                        | Presenter   | P Gajithira   |
| 01.10 pm –             | Paper ID  | 41  |
| 01.30 pm               | Title   | DR-Vision: A Vision Transformer Model for Diabetic<br>Retinopathy Classification using Fundus Images                            |
|                        | <b>Co-authors</b>   | M G A Saumyamala, K A D Deshani   |
|                        | Presenter   | B K A S Rodrigo   |
| 01.30 pm –             | Paper ID  | 54  |
| 1.50 pm                | Title   | A Deep Learning Based Approach for Car Insurance Claim<br>Management  |
|                        | Co-authors  | C H Magalla, Prasad Wimalaratne   |
| 01.50 pm –<br>02.10 pm | Presenter   | E Sankeetha   |
|                        | Paper ID  | 56  |
|                        | Title   | Suspicious Activity Likelihood Detection, Indication &<br>Tracking, and Alert System to Prevent Crimes.                         |

|                       | Co-authors | T S W Walagedara, A J O Geenath, G R S D Gunasinghe, D S Alwis  |
|-----------------------|------------|---|
|                       | Presenter  | Janudi Ranasinghe   |
|                       | Paper ID   | 15  |
| 02.10 pm –<br>2.30 pm | Title      | Convolutional Neural Network and Vision Transformer<br>Models with Dynamic Attention For Emotion Recognition In<br>Facial Dynamics-Based Stress Detection |
|                       | Co-authors | Amantha Jayathilake, Samadhi Rathnayake, Devanshi<br>Ganegoda   |

## **Technical Session I – Track 3**

# **Applications in Machine Learning**

| Session Panel       | Co –<br>Chairs  | Dr. M D T Attygalle and Dr. K A D Deshani   |
|---------------------|---|---|
|                     | Moderators  | Ms. Udara Kumaratunga, Mr. Shashika Ruwankumara   |
|                     | Technical<br>Person   | Mr. Shashika Ruwankumara  |
| Zoom link           | https://zoom.us/j/93416737129?pwd=a3E4M1RqekF0YjdUMjlocElNcWlKdz09<br>Meeting ID: 934 1673 7129<br>Passcode: ICDS2023 |   |
| Time                |   | Information   |
|                     | Presenter   | W M H G T C K Weerakoon   |
|                     | Paper ID  | 38  |
| 12.30 pm – 12.50 pm | Title   | Feature Engineering and Music Genre Classification: A<br>Showdown between XGBoost and Neural Networks   |
|                     | <b>Co-authors</b>   | M S H Peiris, P B S N Ariyathilake  |
|                     | Presenter   | W D Nilakshi Sandeepanie  |
|                     | Paper ID  | 43  |
| 12.50 pm – 01.10 pm | Title   | Paddy Crop Quality Monitoring and Mapping Application<br>using Object Detection Techniques.   |
|                     | <b>Co-authors</b>   | Samadhi Rathnayake, Amali Gunasinghe  |
|                     | Presenter   | E A I P De Silva  |
|                     | Paper ID  | 26  |
| 01.10 pm – 01.30 pm | Title   | A Comparative Study of Academic Performance between<br>Undergraduate Athletes and Non-Athletes of the Faculty of<br>Science, University of Colombo using Machine Learning<br>Techniques |
|                     | <b>Co-authors</b>   | G. H. S. Karunarathna   |
|                     | Presenter   | T J Kotelawala  |
| 01.30 pm – 1.50 pm  | Paper ID  | 8   |
|                     | Title   | Development of a Forecasting Model to Determine the Interest<br>Rate in Sri Lanka – An Approach Based on the 91-Day<br>Treasury Bill Rate   |
|                     | <b>Co-authors</b>   | S D Viswakula   |
| 01.50 mm 02.10 m    | Presenter   | H H D Malithi Pramoda Halpandeniya  |
| 01.50 pm – 02.10 pm | Paper ID  | 49  |

|                    | Title             | IoT Based Smart Paddy Field Monitoring & Water<br>Management System   |
|--------------------|-------------------|---|
|                    | <b>Co-authors</b> | Samadhi Rathnayake, Amali Gunasinghe  |
| 02.10 pm – 2.30 pm | Presenter         | G P Paranawithana   |
|                    | Paper ID          | 23  |
|                    | Title             | Application of Feature Selection and Machine Learning for<br>non-Invasive Breast Cancer Prediction Using Circulating<br>MicroRNAs |

## <u>Technical Session II – Track 3</u>

# Parallel Session I - Applications in Machine Learning

|                       | Co – Chairs   | Dr. G P Lakraj and Dr. A A Sunethra  |
|-----------------------|---|--|
| Session Panel         | Moderators  | Ms. Senuri Yasara, Ms. Navoda Hettige  |
|                       | Technical Person  | Mr. Kasun Nanayakkara  |
| Zoom link             | https://zoom.us/j/92584323504?pwd=TkZNSStCeVA2WkZ5RHJVUjhqcnNldz09<br>Meeting ID: 925 8432 3504<br>Passcode: ICDS2023 |  |
| Time                  |   | Information  |
|                       | Presenter   | S I Ubayawickrema  |
| 03.00 pm –            | Paper ID  | 51   |
| 03.20 pm              | Title   | Using Causal Inference in Portfolio Optimization: A Case<br>Study  |
|                       | <b>Co-authors</b>   | K M M H Siriwardana, S D Viswakula   |
|                       | Presenter   | R A C Tharundi   |
| 03.20 pm –            | Paper ID  | 57   |
| 03.40 pm              | Title   | A Study about Mental Disorders Among Psychiatric Patients<br>in Kalutara District: A Hospital-Based Study              |
|                       | <b>Co-authors</b>   | A A Sunethra   |
|                       | Presenter   | B D S Suwaris  |
| 03.40 pm –            | Paper ID  | 1  |
| 4.00 pm               | Title   | The Study on Malaria Cases Diagnosed in Sri Lanka after<br>Returning From Malaria-Endemic Countries                    |
|                       | <b>Co-authors</b>   | B D S Suwaris  |
| 04.00 pm –<br>4.20 pm | Presenter   | Abhiroop Chatterjee  |
|                       | Paper ID  | 50   |
|                       | Title   | Ensemble-Based Classification of COVID-19 Radiographic<br>Images using Spatial, Textural, and Intensity-Based Features |
|                       | Co-authors  | Susmita Ghosh  |

## <u>Technical Session II – Track 3</u>

|                    | Co – Chairs   | Dr. K A D Deshani and Dr. I T Jayamanne   |
|--------------------|---|---|
| Session Panel      | Moderators  | Mrs. Udara Kumaratunga, Mr. Shashika Ruwankumara  |
|                    | Technical Person  | Mr. Nipuna Suduwella  |
| Zoom link          | https://zoom.us/j/92584323504?pwd=TkZNSStCeVA2WkZ5RHJVUjhqcnNldz09<br>Meeting ID: 925 8432 3504<br>Passcode: ICDS2023 |   |
| Time               | Information   |   |
|                    | Presenter   | D S Sonnadara   |
| 03.00 pm –         | Paper ID  | 6   |
| 03.20 pm           | Title   | A machine learning approach for predicting the depression status among undergraduates           |
|                    | Co-authors  | S D Viswakula, M D T Attygalle  |
|                    | Presenter   | M D T U Ranasinghe  |
| 03.20 pm –         | Paper ID  | 42  |
| 03.40 pm           | Title   | Comparative Analysis of Machine Learning Algorithms for<br>Breast Cancer Tumor Grade Prediction |
|                    | Co-authors  | J H D S P Tissera   |
| 3.40pm -<br>4.00pm | Presenter   | Dhammika Amaratunga   |
|                    | Paper ID  | 27  |
|                    | Title   | Comparing CT Scan Images of Lungs   |

# Parallel Session II - Applications in Machine Learning