YASAS SENARATH

Ph.D. Student / Graduate Research Assistant

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INTERESTS

Social Computing, Disaster Informatics, Natural Language Understanding, Knowledge Bases, Explainable AI, Information Extraction

EDUCATION

School of Computing — Aug. 2019 Present

George Mason University, United States — *CGPA: 3.95/4.0*

· Ph.D. Student (Information Technology)
· Humanitarian, Semantics and Informatics Lab

Department of Computer Science and Engineering — Jan. 2018 Jun. 2019

University of Moratuwa, Sri Lanka — *Overall GPA: 4.20/4.20*

· M.Sc. - Data science research based M.Sc.

Department of Computer Science and Engineering — Jan. 2014 Jan. 2018

University of Moratuwa, Sri Lanka — *Overall GPA: 3.95/4.20*

· B.Sc. Eng. (Hons.) - Honours Degree of Bachelor of Science of Engineering
· Enlisted in Dean's List in All Semesters in the Department of Computer Science and Engineering

EXPERIENCE

Graduate Research Assistant — Jun. 2021 - Aug. 2021

Center For Climate Change Communication — *George Mason University, US*

· Analyze the effectiveness of educational events at Climate Change Communication by analyzing the participants' social media content.

Graduate Research Assistant — Aug. 2019 - Jun. 2021

Humanitarian, Semantics and Informatics Lab (Human-Info-Lab) — *George Mason University, US*

· Analyze Natural and Societal Crises in Social Media.
· Hate Speech Identification - Research Focus: Using Knowledge Bases for Designing Generalized Models.

Graduate Research Assistant — Jan. 2018 - Jul. 2019

Data Science, Engineering and Analytics Research Hub (DataSEARCH) University of Moratuwa, LK

· Researched on fine grained emotion analysis of Tweets
· Designed and developed novel deep learning model for implicit emotion classification i.e. identification of emotions in text documents when the words indicating the emotion are absent
· Attained rank 8th out of 30 participants in Implicit Emotion Shared Task at WASSA-2018 while outperforming the baseline by 8%.

Visiting Instructor — Jan. 2018 - Jul. 2019

Department of Computer Science and Engineering — *University of Moratuwa, LK*

· Visiting Instructor of Subjects: Machine Learning, Data Science, Advanced Algorithms, Data Structures and Algorithms, Object Oriented Programming, Presentation Skills

Trainee Software Engineer   Jul. 2016 - Dec. 2016

Undergraduate Internship   *CodeGen International (PVT) Ltd., LK*

· Opinion and Entity Extraction from Reviews Related to Tourist Attractions.

OPEN-SOURCE PROJECTS

SinLing[1]   2019

Primary contributor of the only toolbox for Sinhalese language processing.

· Includes Tokenizer, Stemmer, POS-Tagger, Morphological Analyzers.

TextFlow[2]   2020

Primary contributor of annotation application for natural language processing. TextFlow is being used in CitizenHelper [3].

PUBLICATIONS

Practitioner-Centric Approach for Early Incident Detection Using Crowdsourced Data for Emergency Services

Y Senarath, A Mukhopadhyay, S M Vazirizade, H Purohit, S Nannapaneni, and A Dubey

The IEEE International Conference on Data Mining (ICDM)   *2021*

· Proposed approach Crowdsourced Multi-objective Event Detection (*CROME*) to quantify the relationship between the performance metrics of incident classification and the requirements of practitioners.

Mining Risk Behaviors from Social Media for Pandemic Crisis Preparedness and Response

Y Senarath, S Peterson, H Purohit, A L Hughes, K K Stephens

International Conference on Social Computing, Behavioral-Cultural Modeling Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS)   *2021*

· Developed an approach to automatically infer the risk behavior from social media posts using machine learning models for COVID-19 pandemic.

Efficient Detection of Multilingual Hate Speech by Using Interactive Attention Network with Minimal Human Feedback

F Vitiugin, **Y Senarath**, H Purohit

ACM Web Science Conference   *2021*

· Proposed a Multilingual Interactive Attention Network (MLIAN) model for hate speech detection on multilingual social media text corpora.

Emergency Incident Detection from Crowdsourced Waze Data using Bayesian Information Fusion

Y Senarath, S Nannapaneni, H Purohit, A Dubey

IEEE/WIC/ACM International Joint Conference On Web Intelligence And Intelligent Agent Technology (WI-IAT)   *2020*

· Principled computational framework based on Bayesian theory to model the uncertainty in the reliability of crowd-generated reports and their integration across space and time to detect traffic accidents.

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[1] https://github.com/ysenarath/sinling
[2] https://github.com/ysenarath/textflow
[3] https://citizenhelper.orc.gmu.edu/

Evaluating Semantic Feature Representations to Efficiently Detect Hate Intent on Social Media
Y Senarath, H Purohit
IEEE International Conference on Semantic Computing (IEEE-ICSC) *2020*

· Novel empirical study of diverse semantic features for hate speech classification task on social media posts.

ACTSEA: annotated corpus for Tamil & Sinhala emotion analysis
R Jenarthanan, **Y Senarath**, U Thayasivam
Moratuwa Engineering Research Conference (MERCon) *2019*

· Scalable semi-automatic approach to create an emotion annotated corpus for low-resource languages.

A Hybrid Approach for Aspect Extraction from Customer Reviews
Y Senarath, N Jihan, S Ranathunga
International Journal on Advances in ICT for Emerging Regions *2019*

· Novel mixture of classifiers approach for aspect extraction, combining an improved CNN with an SVM.

DataSEARCH at IEST 2018: Multiple Word Embedding based Models for Implicit Emotion Classification of Tweets with Deep Learning
Y Senarath, U Thayasivam
Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis (WASSA) *2018*

· Novel deep learning model for implicit emotion detection.

Aspect Extraction from Customer Reviews Using Convolutional Neural Networks
N Jihan, **Y Senarath**, S Ranathunga
International Conference of Advances in ICT for Emerging Regions (ICTer) *2018*

· Designed a Multi-channel Convolutional Neural Network (CNN) for aspect category detection in Aspect Based Sentiment Analysis (ASBA).

Multi-Domain Aspect Extraction using Support Vector Machines
N Jihan, **Y Senarath**, D Tennekoon, M Wickramarathne, S Ranathunga
Conference on Computational Linguistics and Speech Processing (ROCLING) *2017*

· Novel aspect extraction method based on Support Vector Machines (SVMs) and an array of new features and preprocessing.

Online-computer-mediated interviews and observations: Overcoming challenges and establishing best practices in a human-AI teaming context
K K Stephens, K Nader, A G Harris, C Montagnolo, A L Hughes, S A Jarvis, **Y Senarath**, & H Purohit
The Hawaii International Conference on System Sciences (HICSS) *2021*

· A guideline in how to interact with participants when conducting fully mediated research with screen-sharing and video.

HONORS AND AWARDS

CINTEC Award 2018

· Awarded for the undergraduate with the highest grade for the Final Year Project at Department of Computer Science and Engineering , University of Moratuwa, Sri Lanka.

Gold Award for Most Outstanding Digital Communication Project 2018

· Awarded by Rotaract District 3220 Sri Lanka & Maldives at the 28th Rotaract District Assembly held on 08/07/2018 for the Community project TrainLK.

SKILLS

Technical Skills	Python, PyTorch, Keras, Scikit-learn, Pandas, Numpy, JavaScript
Soft Skills	Teamwork, Communication, Presentation