AMILA INDIKA

Phone	(+94) 76 865 8330 / (+94) 35 223 1080	*Email*	amilaindika@eng.pdn.ac.lk
LinkedIn	https://www.linkedin.com/in/amila-indika/	*GitHub*	https://github.com/AmilaIndika789
Website	https://www.amilaindika.me/	*ORCID*	0000-0003-3379-7047

EDUCATION

B.Sc. Engineering specialized in Computer Engineering (English Medium) **GPA: 3.85/4.00**
    Department of Computer Engineering, University of Peradeniya **2015 – 2020**

G.C.E. Advanced Level Examination in Mathematics stream (English Medium)
    Maliyadeva College, Kurunegala **2012-2014**

G.C.E. Ordinary Level Examination (English Medium)
    Kegalu Vidyalaya, Kegalle **2001-2011**

RESEARCH INTERESTS

Data Science	Artificial Intelligence	Natural Language Processing
Mathematics	Machine Learning	Computer Vision

RESEARCH EXPERIENCE

Zone24x7 (Pvt) Ltd, Sri Jayawardenapura, Kotte
Trainee Associate Software Engineer, under Mr. Hansa Perera (Associate Architect – Data Science)

- **Log Machine Learning** **Feb 2019 – July 2019**
  - A machine learning R&D project where analysis of log file data of a large retail chain company based in the United States and doing predictions before an error or critical event happens. Areas & concepts that were used are Natural Language Processing – NLP (text classification & processing) techniques, machine learning techniques, deep learning & neural network concepts, anomaly detection, and topic modeling techniques (LDA techniques).
  - **Contribution:** Main developer along with the supervisor. Log data were analyzed and a topic modeling technique was implemented to categorize log events into groups. These groups were analyzed to find patterns among them. These sequences of patterns among groups are fed to a neural network to predict upcoming log events.

University of Peradeniya, Peradeniya
Undergraduate, supervised by Mr. Sampath Deegalla (Senior Lecturer)

- **Final Year Research Project** **July 2019 – July 2020**
  - A stock market prediction platform that is a software-based platform capable of predicting stock values. This is a research project that involved machine learning, statistics, neural networks, and web development. Different ensemble models for stock market prediction were compared and implementing a novel heterogeneous ensemble model was researched.
  - **Contribution:** Creation of a proper data pre-processing pipeline. SVM, Linear Regression, were implemented as individual models along with blending and stacking ensembles. Optimization of individual models and the implemented ensemble models.

Current Research: https://www.amilaindika.me/

TEACHING EXPERIENCE

University of Peradeniya, Peradeniya
Lecturer on Contract **Aug 2021 – Present**
- Assisted in developing lab exercises, quizzes, exams & grading of lab exercises, and conducting tutorials and lab reviews.
- I'm involved in the following undergraduate courses in the current semester:

- CO323: Computer Communication Networks II
- CO324: Network and Web Application Design
- CO321: Embedded Systems

Temporary Instructor (Teaching Assistant), Department of Computer Engineering   **July 2020 – July 2021**
- Assisted in developing lab exercises, quizzes, exams & grading of lab exercises with a team of instructors
- Conducted lab discussion/review sessions
- I was involved in the following undergraduate courses averaging 60 students per semester:
  - CO224: Computer Architecture
  - CO321: Embedded Systems (Instructor in Charge)
  - CO324: Network and Web Application Design (Instructor in Charge)
  - CO513: Advanced Computer Communication Networks (Instructor in Charge)

Voluntary Instructor Department of Computer Engineering   **Sep 2019 – Nov 2019**
- GP106: Computing
  - an undergraduate freshman course averaging 420 students per semester, covering the following topics:
    - introduction to computing, problem-solving with mathematical packages, the fundamentals of algorithms, introduction to high-level programming languages, problem-solving with programming, scientific programming with a mathematical package
  - Grading of lab exercises with a team of 10 teaching assistants

PUBLICATIONS

Journal Papers [Submitted – Under Review]
(Submitted to Transactions on Neural Networks and Learning Systems – TNNLS)

Pre-print:
A. Indika, N. Warusamana, E. Welikala, and S. Deegalla, "Ensemble Stock Market Prediction using SVM, LSTM, and Linear Regression". TechRxiv, 21-Sep-2021, doi: 10.36227/techrxiv.16626019.v1

Conference Papers [Abstract]
A. Indika, E. Welikala, N. Warusamana, S. Deegalla, "Stock Market Prediction using SVM, LSTM, and Linear Regression", ESCaPe 2020 Project Symposium, pp. 21 [https://bit.ly/ESCaPe2020_Proceedings]

PROJECTS

Zone24x7 (Pvt) Ltd, Sri Jayawardenapura, Kotte
Trainee Associate Software Engineer, under Mr. Hansa Perera (Associate Architect – Data Science)
- **Video Machine Learning**   **Feb 2019 – July 2019**
  - A project where the video feeds of a large retail chain company based in the United States was collected and analyzed to detect the anomaly patterns of data. Areas and concepts that were used are machine learning concepts, time series analysis & prediction, and anomaly detection.

  - **Contribution:** Development of data science components of the project that involved developing machine learning algorithms to detect anomalies of store visit counts in a given period.

University of Peradeniya, Peradeniya
- **IMDB Sentiment Analysis | February 2019**
  - A neural network project which tries to classify whether a given textual review of a movie is a positive or a negative considering the sentiment the reviewer has expressed in the review. Concepts of natural language processing and neural networks were used.

  - **Contribution:** Developing a word2vec word embedding and training MLP and CNN models

- **Real-Time Water Quality Measurement System | February 2018**

o A system that enables us to monitor a few specific qualities of water namely pH, conductivity, turbidity, and temperature. Embedded design is used to measure these parameters using sensors and sent to a central server via a GSM module where those parameters can be analyzed and monitored at the central server.

o **Contribution:** Developing embedded design and back-end development

PROFESSIONAL QUALIFICATIONS

- **Certificate course in Spoken English,** British Council, Kandy
- **Duolingo English Test:** https://certs.duolingo.com/rpmdkb2w
- **TOEFL iBT (did on 28/12/2020):**
  o Reading – 23/30
  o Listening – 28/30
  o Speaking – 22/30
  o Writing – 26/30
  o Overall – 99/120
- **GRE (did on 12/01/2021):**
  o Verbal Reasoning – 145/170
  o Quantitative Reasoning – 162/170
  o Analytical Writing – 3.5/6
  o Overall – 307/340

EXTRA-CURRICULAR ACTIVITIES

Associate Member Institute of Engineers, Sri Lanka (IESL) – AM-27930	**Aug 2021 – Present**
Field Representative (Undergraduate Final Year)	**2019 – 2020**
Student Member Institute of Engineers, Sri Lanka (IESL) – S-23469	**Oct 2017 – Jul 2021**
Member of Zone24x7 Toastmasters club	**2019**
Arunella Charity Program	**2016**

ACHIEVEMENTS

Placed in the **top 40 of ACES Coders** that is an island-wide competitive programming competition	**2018**
Won 1st Place for chess at **University Fresher's Meet** representing faculty of Engineering	**2016**
Received High Distinctions at **Sri Lankan Mathematics Competition**	**2015, 2014, and 2011**
Received Team Merit in **Indonesia International Mathematics Competition (IIMC)**	**2011**

COMPUTER SKILLS

Programming: C/C++, Java, Python, MATLAB
Web Development: HTML, CSS3, JavaScript, SQL

REFERENCES

Roshan G. Ragel	Sampath Deegalla	Hansa Perera
Professor in Computer Engineering	Senior Lecturer	Associate Architect(Data Science)
Department of Computer Engineering	Department of Computer Engineering	Zone24x7 (Private) Ltd.
University of Peradeniya	University of Peradeniya	Sri Jayawardenepura Kotte
roshanr@eng.pdn.ac.lk	sampath@eng.pdn.ac.lk	hansa.deva.perera@gmail.com
Tel: +94812393913 / +94773857755	Tel: +94812393477 / +94777625054	Tel: +94762788768