PUBUDU BOTEJU

Temporary Lecturer - University of Kelaniya

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PERSONAL PROFILE

- *Full Name* : Welathantreege Pubudu Anthony Boteju
- *Name with initials* : W.P.A. Boteju
- *Date of Birth* : 16th of April, 1995
- *Civil Status* : Single
- *NIC* : 951072150V

I am an energetic, ambitious person who has a keen interest in broadening my scope on web development, machine learning, deep learning, neural network, data science, knowledge graphs, passionate about cutting-edge technologies and solving real world problems. Furthermore, I am a hard working, honest individual who has enough potential to grow and willing to accept any challenge. I am friendly, helpful and polite, and have a good sense of humour. I wish to continue my career as an academic researcher working in-collaboration with local and international researchers in a challenging research environment to benefit mutual growth and success while working hard as an academic.

EDUCATION

BSc Honours in Software Engineering
University of Kelaniya

📅 2016 - 2020   📍 Kelaniya, Sri Lanka

- Major: Net Centric Applications | Data Science | Machine Learning and Engineering
- Undergraduate research: Vehicle Recommendation System Using Hybrid Recommender Algorithm and Natural Language Processing Approach
- **GPA - 3.75/4.00 (1st Class Honours)**

CGMA (CIMA - UK)
Chartered Institute of Management Accountants

📅 2015 - Present   📍 United Kingdom

- Diploma in Management Accounting

G.C.E A/L, Physical Sciences (2014)
St.Joseph's College, Colombo 10

📅 2012 - 2014   📍 Z-Score 1.7103

- Physics - A • Mathematics - B • Chemistry - B • General English - C

Primary Education (2011 O/L)
St.Joseph's College, Colombo 10

📅 2001 - 2011

- 8 A's (Including Mathematics, Science, English & Religion) • Arts C

PROFESSIONAL EXPERIENCE

Temporary Lecturer
Software Engineering Teaching Unit, Faculty of Science, University of Kelaniya

📅 June 2020 – Present   📍 Dalugama, Sri Lanka

- Conducting lectures and supervising research and development projects of Software Engineering undergraduates
- Preparing grant/project proposals.
- Teaching Interests : Speech Interfaces | Financial & Management accounting | Information Security | Human Computer Interactions | Machine Learning | Deep Learning
- Research Interests : Recommender Systems | Data Science | Big Data Analytics | Machine Learning | Deep Learning | Neural Networks | Knowledge Graphs | Knowledge Graph Embedding | Negative Sampling in Knowledge Graph Embedding

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Trainee Software Engineer
MVV Information Technology AB

📅 March 2019 – March 2020   📍 World Trade Centre, Sri Lanka

- Involved in both Frontend and the Backend of Casat 4.0 and its sub projects. Kola Integration – A third-party software integration to CASAT 4.0, new user interface design for SAM analysis, fixing performance issues of the system, fixing issues in image uploading system, and URL parameterizing are some of the highlights of my work.
- Technologies: Spring boot | AngularJS | Angular | Bitbucket | SonarQube

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Internship
MVV Information Technology AB

📅 Sep 2018 – March 2019   📍 World Trade Centre, Sri Lanka

- Worked in both Frontend and Backend of Casat 4.0 and its sub applications
- Technologies: Spring boot | AngularJS | Angular | Bitbucket | SonarQube

RESEARCH PROJECTS

Vehicle Recommendation System Using Hybrid Recommender Algorithm and Natural Language Processing Approach
Undergraduate research (Thesis) - University of Kelaniya

📅 May 2019 - March 2020

- *Published at :* International Conference on Advancements in Computing - 2020, Colombo, Sir Lanka
- *Authors :* **P. Boteju**, L. Munasinghe
- *Publication data :* 11th of December, 2020
- *Available at :* IEEEXplore.ieee.org
- Choosing the most appropriate vehicle requires an extra effort and has become challenging for a new customer when buying a vehicle. Finding the most appropriate vehicle model needs some expertise.
- To address this problem, this research presents a novel vehicle recommender system which guides and provides personalised recommendations to the customers using Deep Learning and Natural Language Processing with Collaborative and Knowledge based filtering methods.
- Technologies: Azure Machine Learning Studio | Deep Learning | Natural Language Processing | Flask | Python | Angular8 | Spring Boot | HTML/CSS | Bootstrap | jQuery

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A Case Study in Financial Fraud Detection using Big Data Analytics

📅 March 2021 - May 2021

- *Published at :* International Conference in Data Science - 2021, Colombo, Sir Lanka
- *Authors :* **P. Boteju**, I. Hewapathirana
- *Publication data :* 29th of June, 2021
- *Available at :* Researchgate.net
- The financial industry is currently undergoing digital transformations across products, services and business models. This digitization is aimed at automating most of the manual financial transactions and other relevant services. Therefore, spotting fraud in financial transactions has become an important priority for all financial institutes. The challenges are large-scaled dataset and high data imbalacement. This research work provides valuable insights on dealing with large scaled highly imbalanced big datasets for predicting financial frauds and generating alerts.
- Technologies: Machine Learning | Apache Spark | SMOTE

A review of product based recommender systems used in online shopping platforms

📅 June 2020 - August 2020

- *Published at :* International Conference on Applied and Pure Sciences - 2020, Kelaniya, Sir Lanka
- *Authors :* P. Boteju
- *Publication data :* 26th of November, 2020
- *Available at :* Researchgate.net
- Online shopping platforms have drastically changed the customer behaviour. The customers can make their choices far easily with the help of recommender systems which are an integral part of modern online shopping platforms. In this research, it reviews some of the existing personal recommender systems and analyse there strengths, weaknesses and vulnerabilities. Apart from traditional recommendations approaches, this research discusses about a new method called GPT-3 method which uses minimal lines of codes and no machine learning model training.

Effect of Hyper-parameters on Negative Sampling in Knowledge Graph Embedding
Under the supervision of Eng. Tiroshan (PhD candidate, Japan) and Dr. Lankeshwara (Phd, Japan)

📅 June 2021 - Present

- After the advent of Internet, a huge volume of interrelated, complex, heterogeneous data have been accumulated. Knowledge graph (KG) is a network which represents the relationships among the heterogeneous real world objects or concepts. Knowledge graph embedding and negative sampling are two major sub areas. However, we observed that existing embedding methods show different performance under different hyper-parameter settings. Specially, different settings of hyper-parameters drastically change the performance of KGE methods. This problem motivates us to explore and investigate the effect of hyper-parameters on negative sampling and the embedding results.
- Technologies: Knowledge Graphs | Knowledge Graph Embedding | Negative Sampling | Python | PyTorch

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Engineering plug and play approach for Negative Sampling in Knowlege Graph Embedding
Under the supervision of Eng. Tiroshan (PhD candidate, Japan) and Dr. Lankeshwara (Phd, Japan)

📅 May 2021 – Present

- In this implementation, we are trying to bring three of the popular negative sampling approaches in knowledge graph embedding which are KBGAN, NSCaching, and Structure Aware to one platform where to a given dataset, it can choose either approach and do negative sampling. In this way we are trying to achieve an engineering plug and play generalised negative sampling platform.
- Technologies: Python | PyTorch | TorchKGE

Recipe Engine: Autoencoders for Recipe Optimization and Benchmarking
Under the supervision of Dr. Lankeshwara (Phd, Japan) and Dr. Harsha (PhD, UK)

📅 January 2021 - Present

- Most of our routine works are done according to predefined procedures or recipes. Food recipes provide perfect examples for this phenomenon. For example, there are hundreds of recipes are available for making a Sri lankan Chicken curry. Those recipes differ from each other either because of the ingredients used or their quantities or both. Thus, each recipe gives a unique taste. However, there is no optimized benchmark recipe to consider as the Sri lankan chicken curry recipe. This problem motivated us to investigate methods to produce benchmark recipes using machine learning methods. In the present research, we introduced an Autoencoder model called *Recipe Engine* to produce a benchmark or representational recipes using the different recipes collected via a survey.
- Technologies: Neural Network | Autoencoder | Python

DEVELOPMENT PROJECTS

University Management Information System
Under Team SETU

📅 July 2020 – Present

- This system is basically helps all the stakeholders to easily get their work done. Such course registration, course results with a dashboard, also including admin functionalities such as to enter results, see results summary for each module, generating exam time tables and all the other required functionalities.
- Technologies: React | JavaScript | Spring Boot | MySQl | HTML/CSS Bootstrap and jQuery

Casat 4.0 Project

Under mvv IT - Team

📅 Sep 2018 - March 2020

- This system is able to automate any kind of industrial engineering processes. Currently it uses by VOLVO and other leading manufacturing companies in Sweden.
- Technologies: AngularJS | JavaScript | Spring Boot | Liquibase | MySQl | PostgreSQL | HTML/CSS Bootstrap and jQuery

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Online Consultancy System

Academic - Individual

📅 Sep 2018 - March 2019

- Developed an automated vehicle consultancy system which will assist people when it comes to vehicle maintenance and vehicle buying.
- Technologies: Angular8 | Spring Boot | MySQL | Firebase | HTML/CSS

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E-Commerce Website

Academic - Individual

📅 July 2017 - September 2017

- Developed a web based shopping cart for a Miniature model car shop.
- Technologies: PHP | JavaScript | MySQL | HTML/CSS and Bootstrap

Tourism Website

Pet project - Individual

📅 November 2017 - December 2017

- Developed an official website for a tourism company called "Anro Travelers".
- Technologies: PHP | JavaScript | MySQL | HTML/CSS and Bootstrap

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Arduino Project

Pet project - Individual

📅 December 2017

- Developed a bluetooth controlled arduino car.
- Technologies:Arduino Platform and C Programming.

Information Management System

Academic - Group

📅 November 2016 - December 2016

- Developed a Medical information management system for the University Medical Centre.
- Technologies: PHP | JavaScript | MySQL | HTML/CSS and Bootstrap

Mini Game development

Academic - Group

📅 June 2016 - July 2016

- Single player car race in command line console.
- Technologies: C++

SPECIAL ACHIEVEMENTS

- *Dean's List Enlisted* : Academic year 2015/2016 - Faculty of Science - University of Kelaniya
- *Dean's List Enlisted* : Academic year 2016/2017 - Faculty of Science - University of Kelaniya
- *Gold Medalist* : College best results in Mathematics stream – GCE Advanced Level 2014
- *3rd Place (Bronze Medalist)* : Karate men's kumithe over 84kg weight catergory – BATTLE OF FISTS Invitational University Karate Championship 2017 organized by University of Kelaniya

- *Yelow Belt Holder* : Universal Shotkam Karate Union of Japan has promoted to 10th KYU in January 2017 and to 9th of KYU in July 2017
- *Semi-Finalist* : Biz minds 2017 - organized by Young Entrepreneurs' Association, University of Kelaniya
- *Participation* : Rasoga musical evening 2016 - organized by Department of Industrial Management, University of Kelaniya

TECHNICAL SKILLS

- Languages: Java | JavaScript | PHP | C++ | Python | HTML | CSS
- Frameworks/Libraries: AngularJS | Angular8 | Spring Boot | Bootstrap | jQuery | Liquibase | JWT Authentication
- Databases: MySQL, PostgreSQL, MS SQl, Firebase
- IDEs/tools: IntelliJ IDEA, Jupyter Notebook, Google Colabs, Azure ML Studio, MS Visual Studio, VS Code, WebStorm Arduino Platform, Bitbucket, Source Tree, Git, Beyond Compare, GCP, PgAdmin, MySQl Workbench, phpMyAdmin

SOFT SKILLS

- Ability to work in a team
- Leadership Skills
- Strong team Player
- Good presentation skills
- Good Communication Skills
- Time Management

TRAINING/WORKSHOP

- Soft skills development program on table etiquettes - Sri Lanka Institute of Tourism & Hotel Management in 2018
- Participated for the Codesprint 3.0 with the idea of developing Virtual Medical Simulator, organized by IEEE with Dialog IdeaMart in 2018.
- Google I/O 2018 extended Sri Lanka, powered by Mobitel.
- One-day undergraduate workshop on planning your career – WSO2 in 2017
- Soft skills program - Developing professional and employability Skills, organized by Wisdom Business Academy in 2015
- Colombo White Hat Security Meetups by Tharindu Edirisinghe-WSO2

SPORTS & HOBBIES

Karate Yellow Belt Holder
Team Karate - University of Kelaniya

📅 2017 – 2018

Universal Shotokan Karate Union of Japan has promoted to 10th KYU in January 2017 and to 9th of KYU in July 2017.

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Basketball Player
Team Basketball - St.Joseph's College, Colombo 10

📅 2005

Took part in Basketball practices.

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Vocalist, Guitarist, Music lover, Song reviewer, Book lover

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Vehicle enthusiast, Miniature model car collector

SOCIETIES & CLUBS

Member
Software Engineering Students' Association

📅 June 2017 – Present   📍 University of Kelaniya

Student Association of B.Sc. (Hons.) in Software Engineering undergraduates.

Member
Young Computer Professionals' Society

📅 June 2017 – Present   📍 University of Kelaniya

Committee Memeber
Catholic Students' Movement - University of Kelaniya

📅 2017 - 2018   📍 Universiy of Kelaniya

Organize annual car wash, annual musical show, annual charity prgoram and other events

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Vocalist
St. Nicholas Church Choir

📅 June 2017 – Present   📍 Bopitiya

Team Member
Business Development Team - AIESEC Colombo North LC- AIESEC in SL

📅 Feb 2017 - Jan 2018   📍 University of Kelaniya

VOLUNTEERING

Coordinator
Carwash held by Catholic Students' Movements, University of Kelaniya

📅 August 2018   📍 Negombo

Coordinator
Annual Carol Service organised by Catholic Students' Movement, Colombo Region at Drug Rehabilitation Centre

📅 December 2017   📍 Katana

Tickets incharge
A musical show held by Catholic Students' Movement, in aid of raising funds for the Annual Charity Program

📅 September 2017   📍 University of Kelaniya

Coordinator
Carwash held by Software Engineering Students Association

📅 August 2017   📍 Bulugaha Junction, Kelaniya

REFEREES

Dr. Lankeshwara Munasinghe (PhD, Japan)
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Software Engineering Teaching Unit,
Faculty of Science,
University of Kelaniya
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