

NAVEEN KULARATNE

Software Engineer

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EDUCATION

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| M.Sc. Computer Science, University of Passau, Germany | 2018 – 2023 |
| B.Sc. Software Engineering, Asia Pacific University, Malaysia | 2014 – 2017 |

WORK EXPERIENCE

Web Design and Content Planning Intern, Thousand Japan Co., Ltd., Tokyo **Sep 2017 – Dec 2017**

- Crafted web applications and iOS interfaces with a keen eye for design and practical functionality. Created striking banners and webpages, adhering to iOS design principles to ensure platform maturity and optimal user experience. Conceptualized and designed the screenshot layout for the Fukroo application, enhancing its visibility and appeal on the App Store.
- Applied responsive design principles to create websites that are visually appealing and accessible on all platforms.
- Revitalized the company's web presence by enhancing website structure: Optimized page layouts for consistent user experience, eliminated superfluous alignments to improve readability, and meticulously proofread typography to ensure professional content presentation.

PROJECTS

Master Thesis/ University of Passau ([GitHub](#))

Automated labeling of plain-text privacy policies via machine learning by analysis of labeling strings for DPV mapping.

Python, Tensorflow, Scikit-learn, NumPy, Matplotlib

- Developed and implemented advanced natural language processing (NLP) algorithms for automatic, high-precision analysis of text-based privacy policy statements.
- Implemented machine learning and deep learning models, including SVM, RF, LR, K-NN, LSTM, CNN, and hybrid model (CNN-LSTM), for analyzing a comprehensive labeled dataset of privacy policy statements. Conducted model training on a labeled corpus of privacy policy statements, leveraging the outcomes to generate a GDPR-compliant privacy term
- Leveraging the power of DL models, the project resulted in a remarkable 22.22% improvement in recall and a 10.71% uplift in the F1 score. In contrast, the ML models achieved a significant 62.07% enhancement in precision scores.

Bachelor Thesis/ Asia Pacific University ([GitHub](#))

Web-based medical consultation system for patients in remote areas.

Node.js, Express.js, MongoDB, HTML/CSS

- Developed a web app connecting medical professionals and remote patients, enabling real-time online consultations and transforming healthcare access.
- Engineered a scalable and efficient RESTful API and utilized the Model-View-Controller (MVC) architectural pattern to streamline data handling and business logic. Leveraged Node.js and Express.js to deliver robust CRUD operations, ensuring a maintainable and organized codebase.
- The system is equipped with intuitive user control settings, streamlining the process of scheduling appointments and fostering post-consultation communication through an intuitive commenting feature.

Fake News Classification via Machine Learning Algorithms / Personal Project ([GitHub](#))

Real vs Fake News Classifier: Deployment of a Machine Learning Model Using Flask

Python, Scikit-learn, NLTK, Pandas, HTML/CSS, Flask

- Developed and fine-tuned a Random Forest (RF) and Support Vector Machines (SVM) for news article classification, achieving high precision, recall, and F1 scores. The RF model achieved a 93% precision, 94% recall, and 93% F1 score, while the SVM model outperformed with a 96% precision, 97% recall, and 96% F1 score.
- Leveraged Python's NLTK library to engineer advanced text-cleaning processes tailored to the project's specific requirements. Implemented stop word removal, lemmatization, and punctuation stripping to optimize the model's performance. These enhancements streamlined the data preprocessing pipeline and increased the model's precision by 2%.
- Developed a Flask web app to assess news article authenticity, integrating a high-precision machine learning model for accurate classification of news content as real or fake.

Machine Learning-Driven NBA MVP Predictor/ Personal Project ([GitHub](#))

Utilizing Machine Learning Algorithms to Predict the NBA Most Valuable Player

Python, Scikit-Learn, Pandas, BeautifulSoup, Selenium, JupyterLab

- Utilized BeautifulSoup and Selenium to extract comprehensive player statistics, MVP data, and team performance metrics from 1996 through 2023.
- Executed meticulous data cleaning, eliminating redundant columns and rectifying team name inconsistencies. Addressed NaN values, ensuring robust datasets for machine learning applications.

- Developed a ridge regression model to augment the predictive accuracy of MVP outcomes using extracted basketball statistics. The model initially achieved a mean average precision of 73%, which was enhanced by the integration of additional predictors.

Inspect-Ricals/ Asia Pacific University ([GitHub](#))

Electrical installation and inspection management system

Java, Oracle DB

- Developed a Java desktop application for an electrical company specializing in advanced wiring and installation services.
- Implemented an Oracle database to manage customer and user data securely. The database design was carefully crafted to optimize data storage, ensuring efficient querying and data retrieval.
- Driving operational efficiency, the application organizes the management of inspection processes. It also harnesses the power of data analytics to generate insightful reports, empowering both management and clients with critical business intelligence.

POMS/ Asia Pacific University ([GitHub](#))

Purchase Order Management System

C++, SQL

- Designed and executed a Purchase Order Management (POM) system using C++ and object-oriented programming methodologies. This system dramatically enhanced operational efficiency, streamlined purchase order processes, and improved user experience.
- Engineered a comprehensive system with user authentication, data management, sales tracking, and purchase requisition & order processing functionalities, enhancing data integrity, inventory tracking, sales insights, and procurement efficiency
- Designed and implemented a robust SQL database, ensuring efficient data storage and retrieval. This included creating and optimizing database schemas, writing complex SQL queries, and managing transactional integrity to maintain data consistency.

EMMS/ Asia Pacific University ([GitHub](#))

Electricity Meter Management System

Java

- Designed and implemented a robust electricity meter management system in a student accommodation building, enabling precise billing for each tenant based on their individual consumption. The system also allows the building supervisor to control individual apartment meters, enhancing the management's control over electricity usage.
- Engineered and managed a comprehensive system comprising four critical modules: user authentication, meter type configuration, billing operations, and payment management.
- Architected a robust system leveraging key design patterns to optimize code reuse and scalability. Utilized the factory pattern to enhance flexibility, employed the template method pattern for defining a skeleton of an algorithm in a base class, allowing subclasses to redefine certain steps without changing the overall algorithm's structure, and composite pattern for simplifying the handling of complex structures. These design patterns significantly improved the system's modularity and maintainability.

Jukebox/ Asia Pacific University ([GitHub](#))

Jukebox using queue data structures

C++

- Developed a jukebox application leveraging C++ stack and queue data structures to handle music playback functionality.
- Engineered the software meticulously, focusing on efficient data structure design patterns for optimal performance.
- Implemented user interface capabilities allowing users to create custom songs, add them to a playlist, remove songs from the playlist, view the current playlist, and list all created songs.

SKILLS

Programming Languages – Python, Javascript/Node.js, SQL, Bash

Web Development – Express, HTML5/CSS3

Databases – MySQL, MongoDB, Oracle DB

Data Science/ML – Tensorflow, Scikit-learn, Scikit-Multilearn, NLTK, Gensim, Pandas, NumPy, Matplotlib, Jupyter

Other Technologies – Google Cloud Platform, Selenium, Postman, Git, Looker Studio

Languages – English (Fluent), Japanese (Proficient), Sinhala (Fluent), German (Beginner)

OTHERS

Visa Status in Japan – Long-Term Resident

Driving License – Japanese Driving License