Nipun Chamodya Bandara, Maha Mudiyanselage

0452122690 | nipun.bandara@outlook.com | Bellbird Park, QLD, 4300 | LinkedIn – linkedin.com/in/nipun-bandara
Portfolio – nipunbandara.vercel.app | GitHub – github.com/nipunbandara

Education

Master of Information Technology **Jan 2024 – Dec 2025**
(Major in Software Development, Minor in Data Science)
University of Southern Queensland
Bachelor of Computing in Software Engineering **2020 – 2023**
Curtin University

Technical Skills

Programming Languages – Python, Java, JavaScript, C++, C, C#, .NET
Frameworks & Libraries – HTML5, CSS, XML, SOAP, ReactJS, NodeJS
Data management & analysis – SQL, MongoDB, GraphQL
Data Science – Pandas, Scikit-learn, R
Machine Learning – Supervised/Unsupervised Learning Algorithms, TensorFlow, PyTorch
Project Management – Jira, GitHub
CI/CD Tools/Cloud Services – Jenkins, Git, Docker, Kubernetes, Azure, AWS, Google Cloud
System Administration – Windows Server, Domain Controller, Domain Name Server, Active Directory and Microsoft IIS configurations
Relevant Coursework – Data Structures and Algorithms, Software Engineering Testing, Cyber Security, Design Patterns, Statistics for Quantitative Researchers, Machine Learning, Data Mining for Business Analytics and Cyber Security, Blockchain Fundamentals, Intelligent Multimedia (Computer Vision, Audio) Analysis, Artificial Intelligence for Business

Software Engineering Project Experience

Titans Tickets (titans-tickets.com) **2023 - Present**
JavaScrip | ReactJS | NodeJS | ExpressJS | MongoDB | Docker | Email and Text Services | QRScanner

- Designed and developed a **full-stack ticket selling platform** for a sporting event clients with ~1000 attendees per year, supporting seamless ticket purchases and digital validation of tickets using QR scanner.
- Built a **client-facing portal** with user authentication using mobile number with OTP (OAuth2) to enable ticket selection and real-time email confirmations with dynamic QR codes.
- Engineered a **QR scanning admin platform** for event staff to validate tickets using device cameras; verification synced with the backend in real-time to mark entries as "entered" and prevent re-entry using same ticket.
- Architected and consumed **RESTful and GraphQL APIs** to manage ticket inventory and user data.
- Implemented **caching strategies** with React Query for fast data fetch and low-latency UI rendering.
- Ensured security by integrating **JWT-based authentication** for both users and admins, with role-based access control.
- Deployed using **Docker and Kubernetes**, with CI/CD pipelines on **Vercel for two separate frontends and Render** for backend which is scalable and reliable hosting.
- Monitored system performance and optimized database queries for high-traffic periods during pre-event peaks.

Avanoa Web Application **Dec 2022**
JavaScrip | ReactJS | WebGazer.JS | Sass | NodeJS | ExpressJS | MongoDB | Azure | EmailJS

- Alternative communication platform for motor disability people using their eye movements.
- By using the **WebGazer library** tracking eye movements to interact with the functionalities of the application.
- The application is based on **JavaScript** following the **MERN stack.**
- Project was developed following **the Agile framework** and as **MVP versions** for an actual client as a final-year project.
- Relevant documentations such as **SRS**, **Technical Investigation Summary**, **Software Architecture Specification** and **Project planning** were made.

Gaming Tournaments Mobile Application

Android | Java | Firebase | SQLite

- Android Application using **JAVA** and **Firebase** for online gaming tournament management, where players and organizers manage their functionalities.

Peer-to-Peer Application

C# | ASP.NET | MVC

- **Peer-to-Peer desktop application** to post jobs in **Python** and execute jobs of each peer automatically.
  1. **ASP.Net MVC Web server WPF** (.net framework) with **multi-threaded** (remoting server)
  2. **ASP.Net Core Web Application**

Data Science Project Experience

Depth of Anesthesia (DoA) Index Design **Nov 2024**

Python | scikit-learn | pandas | NumPy | Jupyter Notebook

- Developed a novel Depth of Anesthesia (DoA) index using EEG-derived features, targeting enhanced intraoperative patient monitoring in clinical settings.
- Conducted feature selection, model tuning, and performance evaluation using Pearson correlation, R^2, and Bland-Altman plots to validate model robustness on withheld testing data.
- **Supervised machine learning techniques**: Linear Regression and Random Forest to model BIS-like index from EEG features (x1–x7), ensuring the model output ranged from 0 (deep anesthesia) to 100 (awake).
- **Unsupervised learning algorithms:** K-means clustering and Gaussian Mixture Models on a separate dataset of 4965 EEG segments for data clustering, labeling states A/B to infer depth of anesthesia without supervision.
- Integrated both supervised and unsupervised findings to design a **hybrid ensemble model** combining linear regression and random forest using weighted averaging predictors for enhanced predictive accuracy and resilience.