Don Gunasinha

36 Thornton Street, Kempston, Bedford MK42 8PD, UK
don.gunasinha@gmail.com | 07456141877

Profile

Accomplished Senior Firmware and Design Engineer with a versatile background in **embedded systems, electronics design, and data-driven software development**. Demonstrates a proven track record in **developing high-performance, real-time processing solutions** and **advanced embedded systems** that enhance digital infrastructure across diverse industries. Recognized for a **strategic, hands-on approach** to project management, a strong focus on **innovation in hardware and firmware design**, and a dedication to **mentorship and technical leadership**. Adept at translating complex engineering requirements into robust, user-centered solutions that drive efficiency and reliability.

Education

Master of Science in Data Science

University of the West of England (UWE), UK
2022 - 2023 | **Distinction**

- Excelled in key modules like **Power BI, Tableau, data migration and processing,** and **time series forecasting** using **Python**.
- Achieved distinction in all modules, demonstrating expertise in data analysis, visualization, and predictive modeling.

Master of Applied Electronics

2011 - 2016

- Specialized in **microcontroller programming** and **sensor data communication protocols** (HTTP, Bluetooth, Zigbee, I2C, RS232).
- **Final Project:** Developed a **tide monitoring system** for real-time environmental tracking, integrating sensor data via wireless communication.

Bachelor of Science in Computer Science

University of Sri Jayewardenepura (USJP), Sri Lanka
2003 - 2007

- **Major in Computer Science** with minors in Mathematics and Physics.
- Advanced skills in **C++ programming, PHP, SQL,** and **game development** using graphical programming in C++.

Professional Experience

Firmware Engineer

Spicer Consulting Limited, UK
Feb 2023 - Present

- **Led firmware development** for electronic measurement systems, utilizing the **AMD Zynq 7000 SoC** to drive real-time processing and optimize system control.
- Architected **high-performance firmware** in **Verilog** and **VHDL** for FPGA components, prioritizing **parallel processing** and **hardware acceleration** to meet performance standards.
- Integrated **SPI** and **I2C communication protocols** for reliable data exchange across embedded systems, ensuring robust connectivity.
- Streamlined **data acquisition systems** and implemented **real-time signal processing algorithms**, improving the system's responsiveness and data fidelity.
- Collaborated extensively with cross-functional teams, enhancing firmware functionality and ensuring seamless hardware-software interfacing on ARM Cortex-A9 processors.

Senior Developer

Bluetelecoms, UK
2022 - 2023

- Designed advanced call entry solutions in **PHP** and **MySQL**, enhancing efficiency in telecommunication processes.
- Configured and optimized **Asterisk systems**, facilitating high-performance call handling.
- Created interactive **admin dashboards** with **Apache E-Charts** and **jQuery** for real-time analytics.

Senior Developer

Artificial Intelligence in Medical Epidemiology (AIME), Malaysia
2020 - 2022

- Developed a **COVID-19 medical application** with capabilities for **real-time data processing** and **analytics**.
- Engineered backend systems in **PHP Laravel** and leveraged **Firebase** for delivering push notifications and real-time data updates.

Senior Developer

Inikoo, UK
2018 - 2020

- Built e-commerce ERP systems to streamline business processes, using **PHP** and **MySQL**.
- Developed Android applications for warehouse operations, integrating QR logging and barcode scanning for efficient stock management.
- Designed a **predictive stock system** in **Python Flask**, enhancing inventory planning and reducing waste.

IT Officer

Sri Lanka Navy, Sri Lanka
2012 - 2018

- Developed HR and tide monitoring systems using **.NET** and **SQL**, automating critical tracking and reporting tasks.
- Conducted **cryptographic research**, implementing secure file encryption in **C++** for classified military data.
- Created an Android app for real-time wind speed measurement on warships, utilizing **sensor data analytics** for enhanced operational safety.

Software Engineer

Zelcom RFID, Sri Lanka
2009 - 2012

- Designed PCB layouts and programmed microcontrollers for **real-time data collection** and **transmission**.
- Developed **real-time monitoring dashboards** using **PHP, JavaScript,** and **MySQL** for the garment industry, increasing operational transparency.

Associate Developer

Huawei Sri Lanka (Airtel Project), Sri Lanka
2009

- Gained in-depth experience with **Core Network, billing gateways,** and **VAS** on **Sun Solaris** and **HP Unix** platforms.
- Improved system reliability and throughput by optimizing processes on **Sun Fire T2000** servers.

Associate Software Engineer

Duo Software (PVT) Limited, Sri Lanka
2008

- Developed a **call center application** using **Dialogic Card** and **.NET C#** for enhanced call management.
- Utilized the **Janus UI toolkit** for application development and implemented **C++ double linked list** data structures for efficient caller queue management.
- Involved in **IVR (Interactive Voice Responder)** development using **Voice XML** to enhance automated customer service functionality.

Teaching & Mentorship Experience

Lecturer in PHP Programming

WinSys Academy, Sri Lanka
2005 - 2009

- Taught fundamental and advanced PHP programming, cultivating foundational skills in a structured curriculum.

Lecturer in Computer Science

Various Institutions (Sri Lanka, Maldives)
2009 - 2018

- Conducted courses in **web development, wireless networking,** and **computer science** principles at **GIS Campus** and **E-Soft Metro Campus**.

Private Tutor

Malaysia and Italy
2020

- Provided customized tutoring in programming and IT concepts, tailoring lesson plans to meet individual student needs.

Technical Skills

- **Programming Languages:** C++, C#, PHP, Python, JavaScript, SQL, MySQL
- **Frameworks:** .NET, Laravel, Flask, Slim
- **Tools:** Power BI, Tableau, Asterisk, Apache E-Charts, Firebase
- **Operating Systems:** Linux, Sun Solaris, HP Unix
- **Technologies:** IoT, AI, RFID, NFC, Bluetooth, Zigbee, HTTP, RS232, I2C
- **Development Focus:** ERP systems, real-time monitoring dashboards, mobile applications, data processing pipelines
- **Data Science Proficiency:** Time series forecasting, data migration, data visualization, Power BI/Tableau analytics

---

Project Experience

NFC RFID Reader

Developed an **NFC (Near-Field Communication) RFID reader** post-BSc in Computer Science in 2011. Designed a **TCP/IP stack** on a PIC32 microcontroller, using **PIC C** to capture UUIDs (Tag IDs) in real time from multiple readers across various locations. This project leveraged a PIC microcontroller to coordinate data collection effectively from distributed RFID systems.

Tide Monitoring System

Implemented a **tide monitoring system** using **ultrasonic sensors** to measure water levels, with data centralized in a **MySQL database**. This project involved **TCP/IP programming in C++** and creating a **web-based UI** for real-time monitoring (Video link: YouTube).

Anemometer Development

Built an **anemometer** for the Sri Lanka Navy using an **Atmel AVR microcontroller** for analog data reading. Integrated data processing with **DSP** techniques and designed an **Android-based UI** for monitoring wind speed in real time (Video link: [YouTube](#)).

Huawei IoT Blood Oxygen Data Integration

Enhanced the functionality of a COVID-19 application by integrating **blood oxygen data** collected via **Huawei IoT** devices. Leveraged **cloud-based IoT** for storage and analysis and created a dashboard for monitoring and data visualization.

Time Attendance System

Developed a **time attendance system** using **MQTT protocol** with a client-host-broker structure, featuring Atmel AVR microcontrollers, FPGA, and **firmware in Verilog** for seamless communication and precise data logging.

References Available Upon Request