BELAL HATEM

CONTACT

0225731995

belalhatem@hotmail.co.nz

linkedIn

East Auckland

GitHub

SKILLS

- Programming Languages: Java, C, Embedded C, JavaScript
- Web Development: React, CSS
- Hardware & Software Development: VHDL, FPGA, Quartus Prime, modelsim
- Database Management: SQL
- Customer Service: Excellent communication, problem-solving, and relationship-building
- Project Management: Team coordination, time management, and multitasking

---

TOOLS AND SOFTWARE

- Software: Eclipse, VHDL, Git, UPPAAL, MySQL
- Hardware: Altera FPGAs, Arduino, various sensors

INTERESTS

- Basketball, Music, Astronomy, Conspiracy Theories

EDUCATION

- Bachelor of Engineering (Honours) in Computer Systems Engineering
  University of Auckland | 2020 – 2024

LANGUAGES

- English: Fluent
- Arabic: Fluent

SUMMARY

Driven Computer Systems Engineering graduate with hands-on experience in both technology and customer service environments. Proficient in Java, C, Embedded C, SQL, VHDL, and FPGA, I am passionate about applying my skills to solve real-world challenges. Balancing academic achievements with retail and hospitality experience, I am skilled in communication, teamwork, and delivering outstanding customer satisfaction. I am eager to explore opportunities that allow me to contribute to innovative projects and further enhance my technical expertise.

WORK EXPERIENCE

Retail Sales Assistant

Repco — Botany, Auckland | 11/2022 – Present

- Proactively served customers with a focus on ensuring satisfaction, resulting in positive experiences and strong client loyalty.
- Managed trade sales by building trusted relationships with trade clients, providing tailored service to encourage repeat business.
- Committed to understanding each customer's needs, delivering personalized support that fostered long-term loyalty.

Food And Hospitality

Damaskino — Botany, Auckland | 03/2018 – 8/2022

- Delivered excellent customer service, ensuring a positive dining experience and addressing customer needs promptly.
- Managed and coordinated team members to ensure smooth kitchen operations and timely order completion during peak hours.
- Enforced strict food safety standards and trained staff on proper food handling techniques to maintain quality and compliance.

PROJECTS

LSM303AGR Step Detection and Direction Tracking

- Utilized the LSM303AGR sensor's accelerometer and magnetometer functions to implement a step detection and directional tracking system for movement analysis.
- Calibrated accelerometer and magnetometer values for accurate step counting and direction measurement, enhancing sensor data interpretability and ensuring precise real-time tracking.
- Leveraged STM software for data processing, providing a basis for applications in wearable devices and fitness tracking technologies.

Pacemaker Simulation in SCCharts and C

- Developed a pacemaker model using SCCharts and C to simulate safe heart rate control under various conditions, ensuring accurate responses to irregular heart rhythms.
- Implemented and tested the Random Atrium Pulse logic, validating the pacemaker's performance in real-time scenarios and ensuring compliance with stringent safety constraints.
- Applied rigorous testing and verification methods to ensure reliability, demonstrating potential applications in biomedical devices for critical heart rate monitoring.

Multi-Processor System using Nios II with Cache Coherency Protocols

- Developed a cache-coherent multi-processor system using Nios II cores on an FPGA. Initially implemented a matrix multiplication system with 2 and 4 cores using Altera Quartus Prime and Platform Designer, achieving data consistency across shared memory with mutexes and cache-to-cache data transfers.
- Advanced the design by creating a custom VHDL implementation of the MSI protocol to manage cache coherency from scratch, ensuring efficient and reliable multi-core performance. Simulated and verified functionality in ModelSim to address and debug edge cases.