KISHOR BHANDARI

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EMBEDDED SOFTWARE ENGINEER

Experienced embedded software engineer with 6 years of expertise in developing, testing, and leading projects delivering robust and efficient solutions for high-performance microcontroller programs using C and C++. Hands-on experience working with RTOS, firmware development, and low-level programming particularly using M16C and Rx Renesas microcontrollers. Expertise in Arduino, Raspberry Pi, C, C++ . Additionally, a year of academic expertise in full-stack web development using ReactJS, Node.js, ExpressJS, and Spring Boot along with database such as Postgres, MySQL, MongoDB.

Microcontroller programming in C • Real-time programming • Digital Logic • Communication protocols
Debugging and troubleshooting • Testing and validation • Electronics • Version Control Systems • Agile Development

Languages: C, C++, Java
Web: HTML, CSS, JavaScript, TypeScript
Web Services: REST
Web/App Servers: Apache
Databases: MySQL, Postgres, MongoDB
Design Patterns: State Machine, Singleton, Command, Observer
SDLC: Agile, Waterfall, V-Model
Tools: VS Code, HideMaru, Git, GitLab, JIRA, Confluence, High-performance Embedded WorkShop IDE, CS+ IDE, Ram Monitor, MODSWORKS, Debugger.
Platforms: Windows, Linux, MacOS, Raspbian, Ubuntu
Big Data:
Application/Software: P1P2 communication checker, QA Emulator, D3Checker, Serial Debugger

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PROFESSIONAL EXPERIENCE

CAREER NOTE: *Completed on-campus studies and currently taking distance education courses to complete a* ***Master's Degree in Computer Science*** *(Available for full-time, W-2 employment).*

YOUTH ENGINEERING Co., Ltd., Osaka, Japan • 01/2021 – 10/2023
Electronics Systems manufacturer in Ehime, Japan since 1970.
Software Engineer
Led projects and teams for embedded system development.

- Developed robust software for Daikin heat pumps, boilers, remote controls, and other control units using C on high-performance Renesas microcontrollers, maximizing their efficiency across various use cases.
- Designed and implemented Brine pump control system for Daikin Altherma Heat Pump using C, ensuring 100% reliable pump operation throughout its expected lifespan.
- Implemented power consumption monitoring system for Daikin Altherma Heat pumps and boilers using C, resulting in a 30% increase in power efficiency.
- Implemented a Tank Heating System using C for Daikin Domestic Hot Water pumps, ensuring complete Legionella bacteria elimination from water heating tanks.
- Engineered key functionalities for Daikin's Hybrid Heat Pump using C, ensuring dependable operation for heating, cooling, and hot water supply.
- Built functionalities for Daikin's Ground Source system using C, optimizing reliable heat extraction from the ground to efficiently provide heating, cooling, and hot water.
- Translated client specifications for an Air-Conditioner System into high-quality C language code, ensuring adherence to the highest standards of quality.
- Played a key role in the successful development of Daikin's Altherma units, wearing multiple hats as a tester, developer, and project lead.

Technologies Used: *C, High Perfromance Embedded WorkShop IDE, CS+ IDE, WinMerge, HideMaru, Git, JIRA, Confluence, Daikin P1P2 communication protcol, Daikin QA communication protocol, MODSWORKS code generator*

IMAC ENGINEERING CO., LTD., Osaka, Japan • 11/2017 – 12/2020
Recruits engineers in various fields including IT.
Software Engineer

Developed firmware and embedded systems.

- Developed and implemented comprehensive test cases for an EEPROM interface using the I2C protocol on a Renesas M16 microcontroller, eliminating critical bugs and ensuring data integrity by 100%.
- Authored and executed extensive test cases for the Daikin Madoka thermostat, ensuring a reliable Bluetooth connection between the controller module and smartphone apps.
- Translated technical specifications of Daikin's Altherma units from Japanese to high-quality English, significantly enhancing client satisfaction among European clients.
- Established a streamlined software review system for clients, reducing time expenditure and increasing efficiency.
- Delivered high-quality embedded software for critical systems like heat pumps and remote controls, achieving a zero-defect delivery record through rigorous development and best testing practices.

Technologies Used: *C, Renesas microcontrollers and IDEs (CS+, High performance embedded workshop), Daikin P1P2 communication protcol, Daikin QA communication protocol, MODSWORKS code generator*

ACADEMIC PROJECTS

Maharishi International University (2024) Movie Rating App: A dynamic web application leveraging the MERN stack for movie exploration and curation. For the backend, Node.js and Express.js were employed to build a RESTful API, handling user authentication with JWT, movie data management, and rating submissions efficiently. MongoDB served as the database, providing a scalable solution for storing user profiles, movie details, and ratings with its flexible schema. On the frontend, ReactJS was used to create a dynamic and responsive user interface, allowing users to easily browse movies, submit ratings, and view aggregated results in real-time. Utilized JavaScript, ReactJS, JWT, Node.js, Express.js, MongoDB

Maharishi International University (2024) Dynamic Route Generator (Mock Api Routes): Developed a cutting-edge application leveraging Angular, Node.js, and MongoDB, designed to empower frontend engineers by dynamically generating routes for comprehensive app testing, eliminating dependencies on backend APIs. Utilized Angular for building a responsive and interactive user interface, allowing frontend engineers to easily define and manage routes. Implemented the backend using Node.js, providing a robust and scalable environment to handle dynamic route generation and API mockups. Integrated MongoDB as the database to store route configurations and mock data, ensuring efficient data retrieval and management, significantly enhancing efficiency and streamlining the development process. Utilized JavaScript, Angular, JWT, Node.js, MongoDB

Maharishi International University (2024) Banking and Credit-Card Processing Application: Built a sophisticated backend processing application designed to manage bank accounts and credit card accounts employing a Swing-based GUI to provide a user-friendly interface. Follows Abstract Factory for creating different types of accounts, Observer for notifying account holders of balance changes and fraudulent activity, Singleton to ensure a single instance of core components, and Template Method to define the skeleton of transaction processing algorithms. Adhering to the principles of Object-Oriented Programming (OOP), the application is modular, maintainable, and scalable, ensuring robust performance and security in financial operations. Utilized Java, Swing

PERSONAL PROJECT

Seat Reservation System 2022: Engineered an advanced seat reservation system for office environments, harnessing the power of Sony Pasori NFC reader/writer technology integrated with Raspberry Pi. The system utilizes Python for the desktop application, enabling seamless interaction with NFC hardware for real-time seat booking and management. Complementing the desktop version, a web-based solution was crafted using HTML, CSS, and JavaScript to provide an intuitive and accessible user interface. MySQL was employed for robust data storage and management, while PHP facilitated server-side processing and dynamic content generation. This comprehensive solution significantly enhances workplace efficiency and convenience, streamlining the seat reservation process with cutting-edge technology. Utilized NFC, RaspberryPi, Python, HTML, CSS, JavaScript, MySQL, Node.js

EDUCATION

Master in Computer Science
(In progress via distance education; expected completion 04/2026)
Maharishi International University, Fairfield, Iowa

Key Courses: Advanced Software Development, Modern Web Applications, Web Application Architectures

Bachelor in Computer Engineering
Tribhuvan University, IOE Pulchowk Campus, Kathmandu, Nepal (2016)