SUKHMEET SINGH HORA
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Computer Engineer with hands-on industry experience spanning full-stack software development, industrial automation, embedded systems, and enterprise IT applications, gained through co-op and full-time roles at Indus Automation and New Flyer. Strong proficiency in C, C++, Python, JavaScript, and industrial protocols (MQTT, CAN, J1939), PLC programming to communicate with AWS IoT (Siemens S7-1200/1500), SCADA/WinCC systems, IoT architectures, SQL-based reporting, and cloud-integrated solutions. At Indus Automation, lead development of custom applications, including SQL-integrated reporting tools, Power Platform solutions, and secure real-time dashboards using React, Node.js, Microsoft Graph API, Azure AD (Entra ID), and Power Automate, improving project visibility and operational decision-making. Passionate about building scalable, secure, and data-driven systems at the intersection of software engineering, automation, and energy/industrial domains.

EDUCATION & LICENSES & CERTIFICATION

Bachelor of Science in Computer Engineering, Co-op/IIP Student, University of Manitoba
Graduated May 2025

- Full-Stack JavaScript Development: MongoDB, Node, and React Issued: 2025
- Foundations of User Experience (UX) Design Issued: 2024
- Tech Stewardship Practice Program Issued:2023
- Project Management Foundations Issued: 2024

➢ Honored as Runner-Up for Coop/IIP Student of year Award by FOE

ENGINEERING EXPERIENCE

Indus Automation - Software Developer / IT Support May 2025 – Present

- Spearheading the development and maintenance of a custom project management application, including feature upgrades, performance optimization, and backend data handling.
- Developed the custom tool to automate the creation of Merged PDFs, TOC with internal links, bookmarks and optimized the cut sheet generator and creating submittals.
- Developing custom application interfacing with OPC Server and SQL Server using WinCC OLEDB Provider to automate report generation querying tags and alarms history.
- Architected and deployed secure, real-time dashboards using a React–Node.js–Express full-stack architecture, integrating Microsoft Graph API, Power Automate, and Office Scripts. Automated data extraction from SharePoint Excel sources, implemented Azure AD authentication via MSAL, and delivered role-based dashboards that improved project visibility, deadline tracking, and operational decision-making.
- Designing full-stack software solutions that interface with SQL-based databases, enabling automated data entry, reporting workflows, and user access controls.
- Enhancing and maintaining an IoT-based smartphone application for remote monitoring and control of PLC panels, leveraging MQTT protocols and secure user authentication.
- Supporting the migration of legacy infrastructure to cloud-based server environments, contributing to system architecture planning, server maintenance, and deployment automation.
- Providing internal IT support, including diagnostics, network configuration, and software troubleshooting across engineering and operations teams.
- Collaborating cross-functionally with engineers and managers to identify automation inefficiencies and implement software-based solutions that improve process visibility and operational performance.
- Developed a custom form submission application using Power Apps integrating SharePoint, Power Automate and Email Integration.

New Flyer- Engineering Project Coordinator Co-op Student May 2024 –April 2025

- Participated in project management process improvements by creating, reviewing, and updating templates and processes.
- Automated capacity planning and post-mortem reporting by developing a dynamic template using VBA, Macros, integrating project tracking, weekly hours burndown analysis, and interactive charts with SharePoint, enhancing efficiency.
- Designed and implemented an automated Bill of Materials (BoM) management system using

VBA and Macros, streamlining installations, part updates, and notifications, improving part tracking and batch tasking for design support and testing commissioning.

- Developed an automated budget forecasting tool with VBA, Power BI, and Power Query, enabling real-time tracking of annual and monthly expenditures by integrating actuals and projections, enhancing financial analysis and planning.
- Learned hardware and software fundamentals including data communication, number systems, CAN protocol, J1939, and CAN FD for advanced vehicle networks.

Indus Automation- Engineering Aide – Co-op Student Sept 2022 - December 2024

- Designed and deployed a secure, cross-platform smartphone application enabling real-time remote monitoring and control of Siemens S7-1200/1500 PLCs for industrial systems. Leveraged AWS IoT Core and MQTT to build a feedback-based interface for dynamic setpoint control and telemetry. Programmed PLCs to communicate with AWS IoT using MQTT via Siemens IoT2050 with Node-RED workflows, and implemented role-based access control, secure data visualization, and live alerts via email/SMS. Developed backend architecture for user content management and analytics. The solution revolutionized pump/lift station operations by supporting real-time status updates, multi-station management, and graphical trend analysis, enhanced automation and efficiency.
- Developed an automated SharePoint-integrated project management template in Excel using VBA, Macros, and Power Query, synchronizing with Outlook Events to streamline cross-departmental tracking of purchase order deadlines. Implemented status-based conditional formatting, secure cell locking, automated backups, and workflow automation, achieving an 8x efficiency boost in design and drafting processes.
- Automated Excel-based take-off sheets and integrated PLC input/output descriptions into AutoCAD Electrical (ACADE) using VBA and Macros, optimizing component insertion with Assembly Codes, time tracking, and service record for enhanced operational efficiency. Programmed executable .bat files to automate routine Windows tasks.

Student Web Developer/ Analyst Manitoba Municipal Relations Jan2022 - May 2022

- Developed SharePoint collaboration site and created HTML pages for interacting with SharePoint content. Collaborated with team members and lead developers.
- Executed operational processes including running SQL extracts, reviewing data, supervising batch jobs, and supporting operational staff.
- Authored and executed test scripts and flowcharts for applications FDM, documented user guides and system manuals, and assisted developers and business analysts.

UNIVERSITY ENGINEERING PROJECTS

- Capstone: Designed and implemented a sensor-driven embedded system using sonar and GPS to measure and analyze water depth in real time. Utilized BLE and Wi-Fi (MQTT) for telemetry and feedback transmission to AWS Cloud, enabling mobile-based monitoring with ML-driven hazard detection and safe path planning.
- Full Stack Web Application: Engineered and deployed a full-stack career development platform featuring a dynamic job portal, intelligent job recommendation engine, and real-time quizzing module using the MERN stack. Implemented CI/CD pipelines for streamlined deployment, containerized using Docker, and conducted integration, regression, and load testing to ensure scalability and system reliability.
- Broom Buddy: Engineered a feedback-based embedded control system for deaf curlers using ESP-NOW and a 12-bit ADC. Designed low-power wireless communication and real-time LED feedback loop using a handheld controller and broom-mounted ring. Demonstrated expertise in signal interpretation and device actuation.
- Urban Tech App: Developed a user-friendly online store and static website with features: scrolling interface, specifications, cart functionality, checkout process, account management, product recommendations and category views.
- MusicOSet: Designed and implemented a database encapsulating albums, artists, and songs, and created a front-end command-line interface for database access and usage.
- Legacy Software Antenna Pod enhancement: fixed a playback speed bug and added a podcast upload feature with authentication, UI, and database integration, ensuring reliability through

unit, integration, and acceptance testing.

SOFTWARE/HARDWARE AND ENGINEERING SKILLS

- Embedded Systems & Controls:
  - STM32, IoT2050, Raspberry Pi 4, ESP32, Sonar modules, ADCs, CAN, J1939, MQTT, BLE
  - PLC Programming (Siemens S7-1200/1500, TIA Portal V18)
  - Real-time feedback loops, sensor integration, closed-loop control logic
- Programming Languages: C, C++, Python, Auto LISP, VBA, JavaScript, TypeScript, Dart, HTML, SQL, PHP
- Cloud & Communication: AWS IoT Core, Azure, MSAL Authentication, MQTT, Node-RED, BLE, Wi-Fi telemetry, Real-time data visualization, alert systems, and remote-control interfaces
- Tools & Frameworks:
  - TIA Portal, MATLAB, Git, Docker, React, Node.js, Express, MongoDB
  - AutoCAD Electrical (ACADE), SharePoint, Power BI, Android Studio
- Project & Systems Management:
  - Gantt charts, Burndown analysis, Cross-team coordination, CI/CD pipelines
  - Automation of reporting, BoM tracking, and budgeting tools.