

GURSHARAN SINGH REHAL

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EDUCATION

Bachelor of Applied Science - Software Systems Engineering

University of Regina

2022 – Present

Regina, SK

TECHNICAL SKILLS

Languages: Python, C, C++, JavaScript, HTML, CSS, PHP, VHDL, ARM Assembly, Bash

Frameworks & Libraries: NodeJS, ExpressJS, React, Bootstrap, jQuery, Passport, AJAX, Python
Cryptography, AES-GCM

Tools & Platforms: Git, MongoDB, MySQL, Apache, BIND DNS, Makefiles, SSL, Keil, VS Code,
WordPress, Figma, Office 365, Solid Edge, Postfix, Dovecot, Roundcube, Wireshark, AWS Web

Development: MERN stack apps, REST APIs, encryption systems, TDD workflows, scripting automation

Embedded & CAD: STM32 microcontroller dev, RTOS scheduling, hardware-in-the-loop testing,
UART/oscilloscope debugging, CAD modeling

PROJECTS

Smart Distance Warning Aid | C, STM32F103RB, UART, ADALM2000, KiCad

Apr 2025

- Built an embedded assistive device using STM32, simulating a DUT-like setup with ultrasonic and IR sensors for real-time obstacle detection.
- Implemented non-blocking SysTick and TIM2 logic for precise timing, and automated diagnostics using UART scripting.
- Used ADALM2000 oscilloscope to analyze signal stability, edge timing, and sensor response under controlled test cycles.
- Documented logic flow, testing procedures, and circuit design using KiCad to support lab-level repeatability and validation.

SecureBox – Full-Stack Private Server | Rocky Linux, Bash, Apache, MariaDB, PHP, Postfix

May–Jun 2025

- Built a secure Linux server stack from scratch, starting with BIOS setup, Rocky Linux installation, and full system provisioning on physical hardware.
- Deployed LAMP services (Apache, MariaDB, PHP) with Roundcube Webmail and manually configured SSL, VirtualHosts, and SELinux permissions.
- Configured BIND DNS zones, Postfix and Dovecot for SMTP/IMAP email with TLS, and executed telnet spoofing tests to simulate MTA vulnerabilities.
- Established a VPN and GUI remote access system using OpenVPN, Easy-RSA, KDE, and VNC tunneled over SSH with hardened firewall and service control.

Simon Says Embedded Game | STM32, Assembly, Embedded C

Dec 2024

- Developed an interactive memory game with real-time GPIO input handling via external interrupts and state machine logic.
- Created engaging visual/audio experience using Knight Rider LED animation and tone feedback.
- Managed sequence generation and player validation with progressive difficulty levels.

MediLocate Web Platform | MERN Stack, node.js, express.js, MongoDB, AJAX

Apr 2024

- Built a full-stack healthcare platform enabling city-based clinic lookup and secure booking for patients and staff.
- Designed REST APIs and managed MongoDB schema for role-based access (patient, admin, receptionist).
- Styled mobile-friendly interface using Bootstrap and ensured seamless UX via dynamic Express routes.

- VaultGuard – Password Manager System** | Java, Python, AES-GCM, Git, TDD

Mar 2025
- Developed a cross-language password management system supporting secure credential storage and AES-GCM encryption for confidentiality and integrity.
 - Built encryption, decryption, and key management logic in Java; implemented automation scripts and backend support tools in Python.
 - Applied Test-Driven Development (TDD) to ensure robust functionality, edge-case handling, and maintainable code from the ground up.
 - Used Git and GitHub for source control, version management, and CI-style commit-based testing across modules.
- Regina SDG Mapping Site** | WordPress, Figma, UI/UX

Dec 2023
- Led design and deployment of a local Sustainable Development Goals portal based on community feedback and UN SDG targets.
 - Used empathy mapping to plan user flows and built interface prototypes in Figma.
 - Launched site using WordPress CMS with integrated theme customizations for accessibility.
- Other Creative Projects** | Solid Edge, Blender

2023
- Designed a fully constrained CAD model of a manual juicer emphasizing ergonomic and mechanical precision.
 - Built and rendered 3D animated scenes in Blender to showcase lighting, shading, and camera movement principles.

EXPERIENCE

- Assistant Manager**
Cineplex

Nov 2023 – Present
Regina, SK
- Oversaw full building operations including opening and closing procedures, cash reconciliation, inventory control, and compliance checks.
 - Supervised and motivated a 30 member team, balancing floor coverage, break rotations, and peak-hour service flow.
 - Resolved customer and staff conflicts promptly and professionally while maintaining operational efficiency and guest satisfaction.
 - Led office administration duties such as scheduling, payroll input, staff onboarding, and performance tracking through one-on-one sessions.
 - Collaborated with HQ on business forecasting, goal-setting, and process improvements to align team output with company objectives.
- Loss Prevention Officer**
Executive Protection Services

Jul 2022 – Feb 2024
Regina, SK
- Monitored crowds and facility access at large events including Mosaic Stadium (capacity 30,000+), ensuring full security coverage.
 - Facilitated safe armored transport for ATM cash delivery and recorded detailed route logs per shift.
 - Maintained compliance with SOPs and provincial regulations to ensure client and personnel safety.

AWARDS & AFFILIATIONS

- Microsoft Office Suite 2019 (Excel, Word, PPT)**

June 2022
Admin Geeks
- 1st Place – Regina Engineering Competition (Junior Design)**

Nov 2022
University of Regina
- CCNA – Cisco Certified Network Associate**

2023 – 2026
Cisco
- Microsoft Azure Fundamentals**

In Progress
Microsoft Learn
- AWS Web Architecture**

In Progress
AWS

REFERENCES

Available upon request