ROSY BUDHATHOKI

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EDUCATION

Bachelor of Science - Specialization in Computing Science

University of Alberta – Edmonton, Alberta – Dean's Honors Roll – GPA 3.5 / 4.0

Expected – Dec. 2026

Courses – Search and Planning in Al, Software Engineering, Advanced Machine Learning, Reinforcement Learning, File and Database Management, Data Structures and algorithms.

EXPERIENCE

Software Developer - Test Automation Intern - Pason Systems Corp, Calgary, Alberta

May 2024 - Present

- Developed and maintained test **automation frameworks** using Java with Selenium, significantly improving bug detection efficiency. Integrated automated test execution across multiple platforms, ensuring reliable and repeatable validation processes.
- Built and refined a failure detection system in Python that combines a **rule-based algorithm** with a lightweight **machine learning model** to analyze data from nightly test runs. Leveraged structured **log analysis** to automatically filter out known issues and flag unexpected or high-priority failures, enabling faster and more accurate debugging across the team.
- Project prime for a core application for multiple releases, coordinating with cross-functional teams to prioritize features, identify and
 resolve defects, and deliver releases on schedule.
- Collaborated closely with developers and QA teams to create problem-solving maps, streamline debugging workflows, and support
 international testing efforts for broader software compatibility.
- Managed Jenkins CI/CD workflows, creating and maintaining seed jobs in Groovy to support nightly test pipelines. Ensured stable builds and faster feedback loops.

PROJECTS

ScanSaga | Java, Firebase, Android Studio, XML, JUnit

Developed a **Firebase-integrated** Android app for event management, enabling seamless check-ins via QR code scanning with real-time data validation and updates.

- Implemented role-based access control with optional geolocation verification to ensure secure and accurate check-ins.
- Built automated attendance tracking features, including real-time counters for check-ins and check-outs, allowing organizers to monitor live event capacity and track re-entry.
- · Integrated RSVP tracking and analytics, giving event organizers insights into expected attendance and user engagement.
- Added support for event posters and promotional pop-ups within the app to boost event visibility and outreach.
- Enabled image upload functionality for both event posters and user profile pictures, paired with a responsive and **user-friendly interface** for better usability.

Sudoku Solver | Python, AC-3, Backtracking, Matplotlib, CSP, Heuristics

- Implemented a Python-based backtracking algorithm with AC-3 inferences for Sudoku puzzle solving.
- Developed and compared MRV and First Available heuristics to optimize variable selection.
- Evaluated algorithm performance across 95 benchmark puzzles, capturing runtime metrics and **visualizing comparative results** using Matplotlib to analyze heuristic efficiency.

Database Performance Measure | Python, MongoDB

• Performed comprehensive benchmarking of MongoDB databases using Python, including creating three databases of varying sizes, and analyzing query performance with and without indices.

TECHNICAL SKILLS

- Languages: Java, Python, C, Julia, SQL, MongoDB, Groovy, XML
- Frameworks & Libraries: JUnit, Selenium, Matplotlib, Firebase SDK, Android SDK
- Tools & Platforms: Git, GitHub, Jenkins, Allure, Android Studio, MongoDB, Firebase
- Other: Test Automation, CI/CD Pipelines, UML, Agile (Scrum), REST APIs, Linux (Ubuntu), Windows

ADDITIONAL WORK EXPERIENCES

Quality Assurance Intern - Magnify Access - Toronto, Ontario	Feb. 2025 – Apr. 2025
Product Launch Research Strategy Intern - R&B Retreats - Gracefield, Quebec	Feb. 2024 – Apr. 2024
Food and Beverage Server/Supervisor - Derrick Golf and Winter Club - Edmonton, Alberta	Apr. 2020 – Apr. 2024