

RIYASAT ZAMAN

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EDUCATION

University of Alberta — BSc Computing Science, Statistics Minor

Expected Aug 2026

Relevant coursework: Software Engineering, Algorithms, Artificial Intelligence, Machine Learning, Database Systems, Statistical Computing, Web Applications, Operating Systems, Object-Oriented Programming

TECHNICAL SKILLS

Languages: Python, SQL, R, TypeScript, JavaScript, Java, C++

Data & Pipeline: Apache Airflow, dbt, Snowflake, Streamlit, Docker Compose

Databases: PostgreSQL, MySQL, MongoDB, Firebase

Backend & APIs: Flask, Django, Node.js, Express.js, REST APIs

AI & CV: PyTorch, OpenCV, scikit-learn, Hugging Face, LLMs

Frontend: React, Zustand, Tailwind CSS, Material UI, Jinja2

DevOps: Git, GitHub Actions, Docker, Linux, NGINX, CI/CD

TECHNICAL EXPERIENCE

Software Developer — Space Exploration Alberta Robotics (SPEAR)

Sep – Dec 2023

Autonomous rover navigation — sensor fusion, localization, terrain classification

- Integrated SLAM workflows synchronizing LiDAR and IMU data for precise rover localization across 7+ navigation tests, reducing localization error by ~35% over the previous GPS-only approach.
- Built computer vision pipelines using OpenCV and PyTorch to automate terrain classification and real-time obstacle detection.
- Processed and validated multi-sensor time-series data streams to ensure data integrity across the autonomous navigation pipeline.

Product Developer — UofA Blueprint

Jun – Sep 2022

Production full-stack application for ISA ICard rewards platform — API design, database architecture, QA

- Designed PostgreSQL schema and RESTful APIs with Node.js and Express.js to manage structured user, vendor, and transaction data for ISA's ICard rewards platform serving 10,000+ international students.
- Shipped a React/TypeScript/Tailwind frontend with 10+ feature screens for vendor verification and discount redemption.
- Led QA and usability testing across 3 user evaluation rounds, improving Lighthouse performance score from ~65 to 90+.

PROJECTS

TTC Transit Reliability Pipeline | Python, Airflow, Snowflake, dbt, Docker, Streamlit | [GitHub](#) | [Demo](#)

May 2026

- Built an end-to-end Python data pipeline ingesting live TTC vehicle-location JSON every 15 minutes, landing raw data in Snowflake and transforming through dbt staging, intermediate, and mart layers.
- Orchestrated ingestion and transformation workflows with Apache Airflow and Docker Compose, processing 73,924+ vehicle observations across 218+ routes and 3,235+ distinct vehicles.
- Implemented 44 automated dbt and pytest checks validating source keys, timestamps, route relationships, and data quality contracts.

Verdigris — Distributed Social Network | Django, React, PostgreSQL, Docker | [Video Demo](#)

Apr 2025

- Built a Django/React distributed social network across 5 independently hosted nodes, enabling real-time cross-server posts, comments, likes, and follows between users on different servers.
- Designed REST API contracts for cross-node synchronization of authors, posts, and follows, ensuring consistent state across all nodes.
- Deployed 5 cloud-hosted nodes with Docker, NGINX, and PostgreSQL; secured node-to-node requests with HTTP Basic Authentication.

FocusPilot — Gamified Productivity App | React, TypeScript, Zustand | [GitHub](#) | [Demo](#)

Mar 2026

- Built a modular React/TypeScript productivity app with Pomodoro sessions, task management, notes, XP-based progression, and persistent local session analytics.
- Engineered a background timer system that maintains accurate session state across navigation, reloads, and app state changes.
- Designed a gamified progression system with XP, levels, and 5 tracked user stats; users self-reported a 40–50 minute improvement in focus duration across evaluation sessions.

Capto — AI Image Captioning Tool | Flask, Hugging Face, GitHub Actions | [GitHub](#) | [Demo](#)

Mar 2025

- Built an AI captioning app using Flask and Qwen3-VL via Hugging Face Inference Providers, supporting image upload, caption generation, regeneration, editing, and one-click download.
- Deployed on Render with Gunicorn, environment-based configuration, fallback handling, and a GitHub Actions CI/CD pipeline.