

Kushagra Sharma

+1 (782) 778-7070 | ksharm22@student.ubc.ca | linkedin.com/in/ksharma22 | github.com/itskushagraa

TECHNICAL SKILLS

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

Frameworks/Libraries: React, Next.js, Node.js/Express, Tailwind CSS, PyTorch, scikit-learn, Pandas, NumPy

Databases/Backend: PostgreSQL, Supabase; Computer Vision (YOLOv8, YOLOPv2)

Cloud/Infra: Vercel, AWS, Cloudflare, Git

EXPERIENCE

Undergraduate Teaching Assistant — UBC Computer Science

Sep 2025 – Present

Vancouver, BC

On-Site

- Course: APSC160, an introductory programming class with **700+ enrolled students**.
- Facilitate **weekly lab sessions** to reinforce programming and problem-solving concepts.
- Grade assignments, labs, and exams with consistency and fairness

Full-Stack Developer (Freelance) — SmitsArtStudio

Jul 2025 – Aug 2025

Vancouver, BC

Remote

- Delivered a **production-ready art gallery website** (Next.js, TS, Tailwind, Supabase) tailored for fine art sales.
- Built a **secure email pipeline** (AWS SES) with SPF, DKIM, DMARC, domain-level authentication, rate-limiting, and bot protection using single-use Turnstile tokens.
- Optimized performance with Vercel CDN proxy + WebP assets, reducing storage egress by ~50%.
- Achieved a **100/100 Real Experience Score** with FCP of 1.46s and LCP of 2.51s, ensuring fast access for visitors from 20+ countries.

Lab Assistant (Volunteer) — UBC Department of Mechanical Engineering

Feb 2023 – Apr 2023

Vancouver, BC

On-Site

- Assisted in efforts to restore a \$400,000 WAM robotic arm for human–robot collaboration research, gaining early exposure to robotics repair and lab practices.

PROJECTS

Diabetic Retinopathy Screening Pipeline (Ongoing) | Python, PyTorch, MLflow, FastAPI

Sep 2025 – Present

- Building a deep learning pipeline for **fundus image classification** using transfer learning CNNs.
- Incorporating model explainability and MLOps practices to ensure **scalability for clinical deployment**.

StrayCare — Full Stack Stray Animal Welfare | Database design, node.js

July 2025 – Aug 2025

- Designed and **implemented a normalized relational database** (ER diagrams → BCNF → SQL schema) for tracking stray animal vaccination, feeding, and community care data.
- Built a **Node.js backend** with REST APIs and a responsive **JavaScript/HTML/CSS frontend** to manage CRUD operations, user accounts, and community groups.
- Handled the **frontend development**, ensuring consistent layouts and user flows within project constraints.

FitHub | Java (AWT/Swing), JSON, JUnit

Sep 2024 – Dec 2024

- Built a 15,000+ LOC **fitness app** with a polished multi-screen UI, complete profile management, integrated workout/diet planning, and detailed statistics tracking, earning appreciation from the professor.

The 4Ward Thinker | Raspberry Pi, IR/Ultrasonic, 3D Printing

Mar 2023

- Developed a robotic meal-serving system supporting **60 kg load** via stress analysis; built a 32.67 kg assembly with optimized cost and PLA material for low-carbon footprint.
- Integrated ultrasonic sensors for **collision detection** and modular architecture for charging, storage, and maintenance.

Autonomous Traffic Control System | Raspberry Pi, Python, YOLOPv2/YOLOv8, ML, CV

Sep 2019

- Deployed **vision-driven traffic lights**, reducing wait times by an estimated 15–20% using object/lane detection + time-series prediction.
- Earned recognition in the **Times of India** newspaper; implemented in real-time at a Kolkata intersection.

EDUCATION

University of British Columbia (UBC)

Sep 2022 – May 2027 (Tentative)

B.Sc. Computer Science — GPA: 4.20/4.33 (2024–25W)