

# Akshat Kalra

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## EDUCATION

### University of British Columbia

Vancouver, BC

BSc Statistics with Thematic Concentration in Computer Science (Co-op)

Expected Graduation : May 2027

- **Dean's Honour List**
- **Awards:** Faculty Of Science International Student Scholarship [CAD 7,000], Outstanding International Student Scholarship [CAD 10,000].
- **Relevant coursework:** Computer Networking (**97%**), Statistical Modelling for Data Science (**95%**), Software Construction in Java (**91%**), Models of Computation [Discrete Mathematics] (**93%**), Probability Theory (**91%**), Statistical Inference (**89%**), Computer Systems (**88%**)
- **Hackathons & Case Competitions:** **UBC WiDS Case Competition Winner** (1st Place), **UBC GDSC x Launchpad Hackathon Winner**, **UBC CIC x AWS Gen AI and Sustainability Hackathon 2024 Winner** (3rd Place), **nwPlus HackCamp 2024** (Mentor), **nwPlus cmd-f 2025** (Mentor & Judge), **ASA Datafest** (Mentor)

## EXPERIENCE

### Software Developer (Co-op)

Vancouver, BC

University of British Columbia, Vancouver

May 2025

- Building, extending and maintaining [HelpMe](#), a course assistant tool projected to be used by 5000+ students every term at UBC Vancouver and currently being used by 1500+ students at UBC Okanagan.
- Took the initiative and went beyond role expectations by contributing to GitHub issues from the day one of the role
- Merged 500+ lines of code, 5+ issue fixes and 1 large feature to the application in the first 2 weeks; received positive feedback on the pull requests.

### Undergraduate Teaching Assistant

Vancouver, BC

Department of Computer Science & Department of Philosophy, UBC

Sep 2023 – Present

- **CPSC 121 (Models of Computation):** Led weekly discussion sections and co-led labs to teach discrete math, logic circuits, and finite state machines.
- **PHIL 220 (Symbolic Logic):** Held weekly office hours; graded 200+ assignments and exams with detailed feedback on formal logic and proofs.

## TECHNICAL PROJECTS

### Autonomous Underwater Vehicle – UBC Subbots | C++, ROS2, Python, Docker

Sep 2024 – Present

- Spearheading development of a real-time perception system for an AUV, using custom computer vision models to detect and classify objects for the [RoboSub competition](#).
- Built and deployed a containerized robotics dev environment (Ubuntu 20.04, ROS2, Gazebo), **reducing onboarding time for new members**.
- Contributed to the team's ROS2-based system integration, supporting object retrieval and navigation tasks in a dynamic underwater environment.

### Tranquilo | Next.js, Flask, SQLite, Ngrok, RESTful APIs, BERTopic, RAG

Jan 2025

- Built an AI-powered mental health journal that delivers therapist-like responses to user entries by leveraging Retrieval-Augmented Generation (RAG), BERTopic, and a real-world therapist response dataset.
- Architected a microservices-based backend with orchestrated API pipelines, **reducing round-trip latency from 15+ seconds to 2–4 seconds**.

### Predicting Revenue Impacts of Vancouver's Airbnb Policy | Scikit-learn, Pandas, NumPy

Nov 2024

- **Won 1st Place Overall** at the **UBC WiDS Case Competition @ UBC**.
- Developed an end-to-end machine learning pipeline using the scikit-learn library (Python), **reduced Mean Squared Error from 1,638,519.88 to 1,189,222.25, a 27.4% improvement over the baseline model**.
- Leveraged feature engineering, exhaustive hyperparameter search and recursive feature elimination to boost predictive accuracy and enhance model interpretability, also published a [Medium article](#) detailing the approach, results, and insights.

### Eco-Circle | UBC AWS Hackathon Winning Project | AWS, Next.js, Python

Oct 2024

- Built an AI-powered marketplace to promote sustainable purchasing and upcycling, using the **Llama 3.1 70B Instruct** model for personalized recommendations.
- Implemented a scalable, serverless architecture with 5+ AWS services including **Lambda, DynamoDB, API Gateway, Amazon Bedrock**, and **S3**.

## TECHNICAL SKILLS

**Languages:** C, C++, Java, TypeScript, JavaScript, SQL, Python, R, Racket (Dialect of Lisp)

**Developer Tools:** AWS, Postman, Docker, Git, GitHub, LaTeX, ROS2, TypeORM, Swagger, Scalar

**Libraries/Frameworks:** ReactJS, NextJS, NestJS, NodeJS, Scikit-learn, Flask