Akshat Kalra

Year 3 Statistics Major at UBC

akshatkalra2005@gmail.com | 236-996-7692 | linkedin.com/in/akshatkalra5/ | github.com/Akshat-Kalra | akshatkalra.com

Education

University of British Columbia — Vancouver, BC

BSc Statistics with Thematic Concentration in Computer Science (Co-op) — *Expected Graduation : May 2027*

- **GPA (Most Recent Session):** 89.2% [4.30/4.33] | **Dean's Honour List**
- **Relevant coursework:** Software Construction (CPSC 210) (91%), Models of Computation (CPSC 121) (93%), Probability (STAT 302) (91%) , Statistical Inference (STAT 305) (89%), Computer Systems (CPSC 213) (88%), Introduction to Data Science (DSCI 100) (88%)

Technical Skills

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

Web: Next.js (ReactJS), Node.js, Express.js, MongoDB

Machine Learning: Scikit-learn, NumPy, Pandas, OpenCV

Developer Tools: Docker, AWS, Git, GitHub, LaTeX, Postman, ROS2, Vim

Technical Extracurricular Activities

Hackathons & Case Competitions — Vancouver, BC

UBC Vancouver

- **UBC WiDS Case Competition Winner (1st Place)** — Nov 2024
  - **Won 1st Place among 20+ teams** by building and presenting an **ML pipeline** featuring **ensembling techniques**, **feature engineering**, **hyperparameter optimization** and **recursive feature elimination** reducing prediction error by **27%** (from 1.64M to 1.19M). Published a detailed report on our solution in a Medium article.
- **nwPlus HackCamp 2024 (Mentor)** — Nov 2024
  - Mentored 20+ teams on **Web Dev, AWS, and Machine Learning**, shaping project scope, guiding architectural decisions, and ensuring timely, high-quality deliverables.
- **UBC CIC x AWS Gen AI and Sustainability Hackathon 2024 Winner (3rd Place)** — Oct 2024
  - **Placed 3rd out of 25+ teams** with an AWS-driven platform (Bedrock, Lambda, DynamoDB). Developed **Eco-Circle**, an AI powered marketplace for sustainable buying/selling and up-cycling of used goods.

Software and Firmware Developer — Vancouver, BC

UBC Subbots [Engineering Design Team] — *Sep 2024 – Present*

- Contributing to the design and development of an autonomous underwater vehicle (AUV) for the annual **RoboSub competition** in California, an international event focused on advancing autonomous underwater robotics that attracts participants from over 40 teams worldwide.
- Currently leading the development of a **perception system** by integrating a **custom computer vision model** for real-time underwater object detection using **ROS2** as the communication framework and writing the integration code in **C++**.

Work Experience

Undergraduate Teaching Assistant — Vancouver, BC

Department of Philosophy, UBC — *Sep 2023 – Dec 2024*

- Teaching Assistant for Symbolic Logic (PHIL 220), a second year course focused on **First-Order Logic**.
- Led 2 hours of office hours weekly, providing individual support and clarification on complex topics, and graded over 100 assignments and exams to ensure fair assessment and detailed feedback to aid student improvement.

Technical Projects (Personal)

Predicting Revenue Impacts of Vancouver's Airbnb Policy | **1'st Place @ Case Competition** Nov 2024

- **Won 1'st Place Overall** at the **UBC WiDS Case Competition @ UBC**.
- Developed an end-to-end **machine learning pipeline** using ensemble models to accurately forecast monthly Airbnb revenues under new Vancouver regulations.
- Leveraged **feature engineering**, exhaustive **hyperparameter search** and **recursive feature elimination** reducing prediction error from **1,638,519.88 to 1,189,222.25**, a **27.4% improvement** over the baseline model.
- Published a comprehensive **Medium article** detailing the approach, results, and insights drawn from the analysis.

Eco-Circle | **Hackathon Winning Project** | AWS Bedrock, Lambda, DynamoDB Oct 2024

- An AI-powered marketplace designed to promote sustainable buying and upcycling of goods, built within a 12-hour hackathon timeframe and **placed 3rd out of 25+ teams** at the **UBC CIC x AWS Generative AI and Sustainability Hackathon**.
- Integrated **4+ AWS services**—including **AWS Lambda** for serverless computing, **DynamoDB** for scalable data storage, **API Gateway**, and **Amazon Bedrock** for AI-driven upcycling suggestions.

Sorting Visualizer | ReactJS, CSS Aug 2024

- Aimed to create an educational tool for visualizing sorting algorithms such as Bubble Sort, Insertion Sort and Selection Sort.
- Developed an interactive web app in ReactJS with customization features like adjustable array sizes and animation speeds.

Portfolio Website | ReactJS, JavaScript, CSS3 Jul 2024

- Developed a responsive, single-page portfolio website using ReactJS to showcase personal projects and technical skills.
- Implemented dynamic dark/light mode toggle and React Hooks (`useState` and `useEffect`) for a seamless and efficient user experience.

Technical Projects (Academic)

FitTrackr | Software Construction [CPSC 210] | Java, Swing, JUnit5 Jan 2024 – Apr 2024

- A Java-based health and fitness app enabling users to log 1,000+ workouts, track volume, and visualize progress with a user-friendly Swing GUI.
- Conducted comprehensive unit testing with JUnit5, ensuring reliability and accuracy across core features for optimized user experience.
- Awarded a **100% project score** for delivering a robust, user-centered application that met all project requirements with exceptional quality.

Statistical Analysis on Titanic Dataset | Statistical Inference [STAT 201] | Kaggle, R Jan 2023 – Apr 2023

- Conducted an inferential analysis on the Titanic dataset from Kaggle to explore if ticket class impacted survival, employing hypothesis testing and Z-tests.
- Utilized bootstrapping techniques to ensure robustness and statistical significance, which contributed to achieving a **100% project score**.
- Presented findings in a comprehensive Jupyter Notebook report, demonstrating skills in statistical data analysis and effective communication of insights.

Honours and Awards

Faculty Of Science International Student Scholarship | UBC 2024

- This scholarship recognises strong academic achievement, engagement within the Faculty, and the potential to make meaningful scholarly contributions; valued at **7,000 CAD**.

Outstanding International Student Award | UBC 2022

- Awarded to select international students for exceptional academic achievements; valued at **10,000 CAD**.