

Akshat Kalra

Year 3 Statistics Major at UBC

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TECHNICAL EXTRACURRICULAR ACTIVITIES

Software 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.
- Utilizing **ROS2** for communication and control systems to ensure modularity and scalability in AUV operations, alongside **Gazebo** for high-fidelity simulation and testing of underwater dynamics.
- Technologies & Programming Languages Used: **ROS2, Gazebo, C++, Python**

Hackathon Mentor

Vancouver, BC

nwPlus HackCamp 2024

Nov 2024

- Mentored participants in brainstorming and refining project ideas, providing guidance on technology selection, project scope, and development strategies.
- Provided in-depth technical mentorship on **Web Development, AWS, and Machine Learning**, helping participants overcome project-specific challenges and implement scalable and innovative solutions.

UBC CIC x AWS Gen AI and Sustainability Hackathon 2024 Winner

Vancouver, BC

Sauder Learning Labs, UBC

Oct 2024

- Developed **Eco-Circle**, an AI-powered marketplace that promotes a **circular economy** by facilitating eco-friendly buying, selling, and upcycling of used goods.
- Achieved **3rd place out of 25+ teams** at the UBC Cloud Innovation Centre x AWS Hackathon 2024
- Utilized **AWS Bedrock, Lambda, S3 Buckets, API Gateway, and DynamoDB** to create an AI-driven platform delivering real-time upcycling suggestions and environmental impact insights.

WORK EXPERIENCE

Undergraduate Teaching Assistant

Vancouver, BC

Department of Philosophy, UBC

Sep 2023 – Present

- Teaching Assistant for Symbolic Logic (Phil 220), responsible for leading weekly office hours for 50+ students, implementing interactive teaching strategies to enhance student comprehension and boost engagement by 20%.
- Conduct 2 hours of office hours weekly, providing individual support and clarification on complex topics, and grading 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** to boost predictive accuracy and enhance model interpretability.
- 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

- Developed **Eco-Circle**, an AI-powered marketplace designed to promote sustainable buying and upcycling of goods, built within a 12-hour hackathon timeframe.
- Achieved **3rd place out of 25+ teams** at the UBC CIC x AWS Generative AI and Sustainability Hackathon for our innovative approach to sustainability.
- Integrated **4 AWS services**—including 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 – Present

- 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.
- Utilized ReactJS for efficient state management and dynamic rendering, and applied CSS for intuitive and visually appealing user interface design.

Portfolio Website | ReactJS, JavaScript, CSS3

Jul 2024 – Present

- Developed a responsive, single-page portfolio website using React.js to showcase personal projects and skills.
- Implemented dynamic dark/light mode toggle and React Hooks (**useState** and **useEffect**) for a seamless and efficient user experience.
- Designed an interactive resume and project gallery with live demo links, providing users easy access to professional information and code repositories.

TECHNICAL PROJECTS (ACADEMIC)

FitTracker | Software Construction [CPSC 210] | Java, Swing, JUnit5

Jan 2024 – Apr 2024

- Developed FitTracker, 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.
- Implemented data persistence for saving/loading workout history, allowing long-term progress tracking and goal management.
- Conducted comprehensive unit testing with JUnit5, ensuring reliability and accuracy across core features for optimized user experience.
- Awarded a **perfect 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 **perfect project score**.
- Presented findings in a comprehensive Jupyter Notebook report, demonstrating skills in statistical data analysis and effective communication of insights.

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 Cloud, Git, GitHub, LaTeX, Postman, Linux, ROS2

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**.

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%)