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)

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)

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

- Developed FitTrackr, 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, Python, R, Racket (Dialect of Lisp)

Web: Next.js, ReactJS, Node.js, Express.js, MongoDB, RESTful APIs

Data Science and Machine Learning: Scikit-learn, R, Python, Pandas, NumPy

Supervised Learning: Linear Regression, Logistic Regression, Decision Trees, Support Vector Machines

Unsupervised Learning: K-means, hierarchical clustering, and DBSCAN

Cloud: AWS Bedrock, AWS Lambda, S3 Buckets and DynamoDB.

Developer Tools: Git, GitHub, LaTeX, Docker, Postman

Honours and Awards

Outstanding International Student Award | UBC 2022

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

Dean's Honour List | UBC 2024

Education

University of British Columbia Vancouver, BC

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

- Cumulative GPA: 82.7%
- Relevant coursework: Software Construction (CPSC 210) (91%), Models of Computation (CPSC 121) (93%), Probability (STAT 302) (91%) , Statistical Inference (STAT 201) (88%)