

# Ankur Bhardwaj

Major in Computer Science and Statistics, 4<sup>th</sup> Year (Available for 4/8/12 months)

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## Technical Skills

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**Certifications:** AZ-900 Microsoft Azure Fundamentals

**Languages:** Python, C/C++, Java, HTML, CSS, JavaScript, SQL, R, TypeScript

**Tools:** Git, GitHub, Azure, Excel, Tableau, Terminal, PowerBI, VSCode, Jupyter Hub, R Studio

**Libraries:** numpy, pandas, matplotlib, scikit-learn, seaborn, mysql.connector, JUnit, Swing

## Technical Projects

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### Speech Recognition System | *Python, API*

- Developed a Python-based speech recognition system to record and transcribe audio input.
- Utilized pyaudio and wave libraries for capturing and handling audio data and implemented an API integration for accurate transcription of recorded audio.
- Designed the system to support various audio formats and ensured seamless audio processing and transcription with efficient error handling.

### Personal Website | *HTML, CSS, JavaScript*

- Engineered an intuitive and user-friendly interface through HTML, CSS and JavaScript.
- Designed and developed a responsive website, ensuring a seamless user experience across various devices and screen sizes through Bootstrap framework.
- Integrated jQuery for enhanced user experience and Font Awesome for enhancing visual appeal.

### Campus Capture | *TypeScript, JavaScript, HTML, CSS*

- Optimized data handling with asynchronous calls, ensuring efficient processing of large datasets.
- Enhanced data retrieval using parse5, fs-extra, and JSZip, enabling parsing of diverse file formats for improved accessibility.
- Ensured system reliability through rigorous testing across backend, HTML parsing, and frontend implementation, ensuring seamless integration and performance through a RESTful API design.
- Engineered using collaborative development through weekly scrum meeting.

### Fitness Tracker App | *Java, Swing, Junit, Git*

- Engineered a fully functional GUI using basic Java libraries and Swing, allowing users to save and keep track of various aspects of their jogs.
- Added save and load functionality, allowing users to store and load and view the previous data.
- Integrated Event Log feature, tracking all features used by the user for improved user experience.

### Library Database Management System | *Python, MySQL*

- Created a fully functional database management system for a library to keep track of its books as well as help with other services such as issuing and returning of a book.
- Used MySQL to create a database to store the library data and accessed the books database using python libraries and performed the necessary operations.
- Supports multiple memberships for different users.

## Statistical Projects

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### Dep2Phrase | *Python, NLP*

- Analyzed and implemented chunking techniques on constituency and dependency structures of sentences to evaluate the correlation between constituency and dependency chunking results.
- Obtained generalized merging rules from the constituency structures and applied the rules for chunking of dependency structures to generate a mapping between them.
- Achieved Precision and Recall of 88% and 89% respectively.

### **NYC Airbnb Regression Analysis** | *R, Regression, Model Selection*

- Conducted thorough EDA using visualizations on the NYC Airbnb dataset and applied necessary transformations for improved data understanding and model performance.
- Addressed multicollinearity by dropping similar features and trained multiple regression models, employing  $C_p$  Mallow's statistic and AIC scores for effective model selection.
- Selected the best-performing model based on  $C_p$  and AIC criteria, achieving a multiple  $R^2$  score of 0.676 and an RMSE of 2.6365.

### **Miscellaneous Machine Learning Projects** | *NLTK, scikit-learn, Seaborn, TimeSeries*

- Achieved grades of 90% - 100% in bi-weekly Machine Learning projects covering Regression, Clustering, Classification, Dimension Reduction & Deep Learning algorithm/techniques.
- Delivered insightful findings through model reports on testing and validation sets, outperforming the class average accuracy by 5-10%

### **Greenest City Project – A Statistical Inference** | *R, Hypothesis-testing, Git*

- Conducted in-depth EDA including creation of multiple plots to visualize and analyze between the various predictor variables and target variables.
- Used the data collected by the Vancouver authority. Cleaned and filtered the data to incorporate the necessary explanatory variables.
- Conducted hypothesis testing at 5% significance level and provided our findings along with a proposed future plan.

## **Work Experience**

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### **Undergraduate Teaching Assistant** | *University of British Columbia*

Sept 2023 – Apr 2024

- Teaching assistant of statistics course: Elementary Statistics for Application.
- Demonstrated a strong ability to adapt teaching techniques to accommodate diverse learning styles and needs, resulting in improved student comprehension and performance.
- Independently conducted and supervised a lab of 36 students.
- Managed grading and provided constructive feedback to students on their work, facilitating their academic growth and encouraging continuous improvement.

### **Catering Associate** | *AMS Nest Catering and Conferences*

May 2022 – Sept 2023

- Helped organize and set up events.
- Worked in a high pace environment with extensive teamwork.
- Gained experience to improve my customer service skills.

## **Volunteer Work Experience**

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### **Events and Outreach Director** | *Undergraduate Statistics Society, UBC*

Jan 2023 - Present

- Responsible for organizing and conducting events.
- Assisted the marketing team in promoting the events.
- Maintained communication with the sponsors and other clubs.

### **Intern** | *Suman Packaging Pvt. Ltd.*

May 2021 - Aug 2021

- Interned at a corrugated boxes manufacturer company.
- Coordinated orders of the clients to the manufacturing team.
- Managed the finances of the business.
- Gained invaluable experience about workings of a business.

## **Education**

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### **Bachelor of Science, Computer Science and Statistics, University of British Columbia**

Vancouver, BC | Expected in May 2025

- Dean's Honour List with 3.9 GPA