

# Snehal Ray

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## EDUCATION

### University Of Alberta

Bachelors of Science in Computer Science (Honors)

Edmonton, AB, Canada

Aug. 2022 – May 2026

## RELEVANT COURSEWORK

Introduction to the Foundations of Computation I and II, Practical Programming Methodology , Algorithms I , Introduction to File and Database Management , Introduction to Software Engineering , Basics of Machine Learning , Linear Algebra I, Calculus I, II, III, Statistics 151 and 252

## TECHNICAL SKILLS

**Languages:** Python, C, C++, Java, Javascript, SQL, MongoDB, JavaScript, R, Julia, Firebase, PostgreSQL, Assembly, TypeScript

**Frameworks:** HTML, CSS, React, Node.js, Django, Tkinter, Express.js, Next.js, Tailwind CSS

**Developer Tools:** Linux, Git, Google Cloud Platform, VS Code, AWS, Android Studio, NetCode, Figma

**Libraries:** Pandas, NumPy, Matplotlib, Selenium, Pytorch, Tensorflow

## EXPERIENCE

### Hackathon - NeurAlbertaTech - NatHacks

Nov 16 2023 – Nov 19 2023

University Of Alberta

Edmonton, AB

- Developed a Unity and C# multiplayer racing game that integrates real-time Muse 2 headset brainwave data to train focus by adjusting car stability and speed based on concentration levels.
- Utilized BrainFlow API to capture and process EEG data, and employed gyroscopic and accelerometric data for directional control.
- Implemented Netcode for real-time multiplayer functionality, overcoming significant technical challenges and conducting extensive user testing to ensure accuracy and reliability.

### Competitive Programming Competitions

Nov. 2022 – Present

University Of Alberta

Edmonton, AB

- Participated in competitive programming events three times a year, tackling complex algorithmic problems in areas like Dynamic Programming, Greedy Algorithms, and Data Structures within strict four-hour limits.
- Worked in a team, focusing on algorithm design and creating detailed pseudocodes, effectively explaining solutions for efficient implementation.
- Enhanced problem-solving and coding efficiency by learning advanced techniques like backtracking, greedy algorithms, dynamic programming, and graph algorithms, while preparing through LeetCode hard problems and gaining insights from seniors.

## PROJECTS

### Event Organizing Android App | Java, Android Studio, Firebase, JUnit, XML, Mockito

Jan 2024 – April 2024

- Led a team of six to develop a full-stack Android application for event management, using Scrum techniques, UML, CRC Cards, and story points to ensure efficient project management and communication.
- Implemented core features for organizers, including event creation, QR code generation and social media sharing for check-ins, real-time attendance tracking, notifications, and geolocation services, ensuring comprehensive control over events.
- Developed attendee functionalities, enabling quick check-ins via QR codes, profile management, and event browsing, providing a user-friendly and personalized experience without the need for login credentials.
- Integrated Firebase for robust data management, real-time messaging, and notifications, enhancing user engagement and ensuring data integrity.
- Performed extensive testing using JUnit and Mockito to ensure application reliability, resulting in a successful deployment for a real-life event with over 100 users.

### Text Summarization ML Project | Python, Flask, HTML, CSS, BART Transformer

Jan 2024

- Developed and fine-tuned a machine learning text summarization model using Facebook's BART transformer, improving performance with over 200 diverse text samples from the Hugging Face dataset.
- Deployed the model via a user-friendly Flask web interface with HTML and CSS for real-time summarization, enhancing user interaction and accessibility.
- Implemented and optimized a custom training pipeline with Hugging Face's Trainer API, and conducted comprehensive testing for model robustness, reliability, and scalability.

### Threads Clone Website with AI Chatbot | React.js, Node.js, Express.js, MongoDB, Chakra UI, Dialogflow

June 2024 - Ongoing

- Developed a full-stack MERN application with dynamic UI using React.js, Chakra UI, and Vite, enhancing user experience with components like Avatar, modals, and grids.
- Implemented a robust backend using Node.js, Express.js, MongoDB, and JWT, with RESTful APIs for authentication, post creation, and interactions.
- Integrated Dialogflow chatbot for user assistance and deployed the application using Vercel for seamless CI/CD and hosting.
- Prepared for future integration of Socket.io for real-time chat functionality and ensured secure authentication with middleware.