

# Shahab Ibrahim

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## EDUCATION

### University of Alberta

Edmonton, AB

*Bachelor of Science, Specialization in Computing Science*

*Expected Graduation, May 2027*

- **Concentrations:** Web Development and Machine Learning
- **Related Coursework:** Data Structures & Algorithms (CMPUT 204), Computer Organization & Programming (CMPUT 201), Machine Learning (CMPUT 267), Objects Design & Object-Oriented Programming (CMPUT 301), Statistics/Applications (STAT 252), Data Science (CMPUT 195), File/Database Management **SQL** (CMPUT 291)

## EXPERIENCE

### Data Science Intern

*Jun 2023 – Jan 2024*

*M2M Tech*

*Edmonton, AB*

- Hands-on experience in data science using **NumPy/Pandas** for data cleaning, preparation, and analysis
- Developed and deployed interactive data visualizations using Python libraries like **Bokeh**, including line charts, bar charts, dashboards, and real-time visualizations from live APIs
- Created and published web-based visualizations to present dynamic data insights
- Integrated external APIs for data acquisition and live analysis, enhancing user experience on websites by **30%**
- Explored ML with **K-means clustering** for customer segmentation, pattern recognition, and decision-making
- Completed data science projects using Python and visualization tools to deliver insights and data-driven solutions

### Undergraduate Research Assistant

*Jul 2022 – Sep 2022*

*University of Alberta*

*Edmonton, AB*

- Analyzed Python Jupyter notebooks to improve content clarity and instructional effectiveness for future students
- Provided feedback on code examples and teaching materials to enhance student comprehension/learning outcomes
- Collaborated with the professor to refine teaching strategies and ensure the notebooks are aligned with best practices in coding pedagogy

## PROJECTS

### Flappy Ball | *JavaScript, HTML, CSS*

*Sep 2024 – Feb 2025*

- Engineered a Flappy Bird-inspired game featuring custom game mechanics, physics, and user interactions
- Implemented dynamic animations, collision detection, and smooth controls to deliver a seamless gaming experience
- Utilized event-driven programming to manage player inputs and game state transitions.

### Moodify | *Java, XML*

*Jan 2025 – Apr 2025*

- Collaborated on designing/building an Android application that allows users to create and share 'moods'—with optional descriptions, social contexts, and photos—through a social feed
- Intuitive **UI/UX** using XML layout and connected it to a **Java backend** for data management and business logic
- Incorporated **user authentication**, follow functionality, and private vs. public mood settings
- Implemented a **real-time notification system** using **Firebase Cloud** Messaging to alert users of new follow requests and notify them when followed users post new moods

### Sudoku Solver | *React/JavaScript, TypeScript, HTML, CSS*

*Apr 2025 – May 2025*

- Designed and shipped a full-stack Sudoku web app with React19, TypeScript, Vite, and Bootstrap, delivering an interactive 9×9 grid that lets users preload or randomly generate puzzles and solve them instantly
- Engineered a custom CSP solver that combines Arc-Consistency3, an MRV heuristic, and depth-first backtracking—cutting the average search space by orders of magnitude and returning valid solutions
- Implemented real-time board validation and responsive UI/UX, boosting usability and preventing invalid inputs

## ACTIVITIES & LEADERSHIP

**Muslim Student Association:** Help set up religious events, welcoming new students

**Elections Canada:** Worked as information officer and coordinated the flow of electors at the polling station, ensuring efficient voter check-in and directing them to their designated voting areas

## TECHNICAL SKILLS

**Languages:** Java, Python, JavaScript, HTML/CSS, **SQL**, **MongoDB**, C, C#

**Developer Tools:** Android Studio, IntelliJ, PyCharm, Jupyter Notebooks, Git, VSCode, CLion