

RUDRA UKANI, HBSC (COMPUTER SC) CO-OP

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EDUCATION

- Pursuing **HBSc (undergraduate) in Computer Science (Co-op)** at Lakehead University, **expected completion date: September 2027**.
- Completed **Higher Secondary education in Science, majoring in IT**, at Gajera International School in February 2023.

SUMMARY

I am a **second-year undergraduate Computer Science student** at Lakehead University seeking a **co-op position** to apply my technical skills and expand my expertise. My strong foundation in **C++, Python, SQL, and Java** enables me to develop innovative and efficient solutions. Notable projects include a **transit service program for Thunder Bay**, a **maze navigation system**, and a **virtual assistant in Python**, all of which demonstrate my ability to solve complex problems and deliver user-focused designs. I am **certified in Data Structures and Algorithms** from Udemy and **Data Science 101** from Cognitive AI, reflecting my commitment to continuous learning and professional growth. Currently, I am working on a **Python project analyzing climate data** to enhance my data analysis capabilities.

TECHNICAL SKILLS

I have a strong proficiency in **programming languages** such as **C++, Python, SQL, and Java**. My **software design expertise** encompasses **architecture patterns, UML diagrams, modularity, and software testing**. I possess in-depth knowledge of **operating systems**, including **process management, file systems, inter-process communication, and networking**. My background also includes a basic understanding of **accounting principles** and **business management strategies**, providing me with a holistic perspective on technical and organizational challenges.

TEACHING AND MENTORING EXPERIENCE

In 2021, I **mentored junior students**, guiding them through day-to-day lab activities and helping them build a strong foundation in programming. As a **teaching assistant in 2023** for a **C++ course** at Proton Study Center, I played a significant role in student success, with **80% and 90% pass rates achieved** in two separate cohorts. These experiences reflect my ability to communicate complex ideas effectively and foster a supportive learning environment.

PROJECTS

Thunder Bay Transit Services in C++

This project involved developing a **C++ program to streamline transit services**. I implemented a **secure login system** with username and password validation and created a feature that allowed users to input travel routes. The program **calculates and displays travel distances**, ensuring accuracy and user convenience. This project also integrated principles of **full-stack development and database management systems**.

Navigation and Maze Creation in C++

In this project, I designed and implemented **algorithms for random maze generation and pathfinding**. The application provided **user interaction features** to navigate through the maze and visualized the paths through **text-based or graphical representations**. This project demonstrates my **problem-solving capabilities, object-oriented programming expertise**, and understanding of **data structures and algorithms**.

Virtual Assistant 'Friday' in Python

This Python-based virtual assistant, named **'Friday'**, integrates **speechrecognition** for voice commands, **pyttsx3** and **gTTS** for text-to-speech, and **pygame** for audio playback. The assistant can **open websites like Google, YouTube, and Facebook, play music, fetch news headlines via NewsAPI**, and interact intelligently using **OpenAI's GPT-3.5 Turbo model**. Designed with **modularity** in mind, this project emulates features of popular virtual assistants like Alexa and Google Assistant, showcasing my ability to integrate **AI, real-time interaction, and voice recognition technologies**.

CERTIFICATIONS

I have earned a certification in Data Structures and Algorithms from Udemy, which solidified my understanding of foundational programming concepts. Additionally, I completed Data Science 101 from Cognitive AI, gaining insights into data analysis and visualization techniques.

CONFERENCE PRESENTATIONS

At the **IIMUN conference**, I delivered a **presentation on the importance of coding**, highlighting its relevance in current times, career opportunities it provides, its role in enhancing problem-solving skills, and its potential impact on future innovations. This experience reflects my ability to communicate effectively and inspire others.