

UTSHA SAMANTA

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Education

University of Alberta

Bachelor of Science in Computer Science with specialization

GPA: 3.85

Expected graduation - Dec. 2026

Edmonton, AB

Relevant Coursework

- Data Structures and Algorithms
- Software Engineering
- Database with SQL
- Foundation of Computing (Python)
- Formal System and Logic
- Programming Methodology in C

Experience

Software Developer Intern

Jan. 2025 - Present

Alberta Newsprint Company

Whitecourt, AB

- Maintained and developed new features for in-house applications using **JavaScript, React and Python**, while integrating them with Neuron ESB to improve performance, and streamline data flow across business systems
- Modernized a legacy API by designing a custom **Python** wrapper over a **32-bit C DLL** and building a **FastAPI** layer on top, making the system 2x easier to extend and reducing code complexity by over 50%
- Wrote scripts using **Python, Pandas and Selenium** for weekly tasks, cutting execution time from 3+ hours to 2 minutes (98% reduction) significantly reducing operation costs

Software Developer

Jun. 2024 – Dec. 2024

University of Alberta Autonomous Robotic Vehicle Project

Edmonton, AB

- Collaborated with three team members to develop a **Gazebo simulator** integrated with **ROS2** using **Python**, enabling on-demand testing and eliminating the need for biweekly field tests, accelerating development by 60%
- Maintained and updated the ARVP website by creating over 5 reusable **React components**, improving page load time by 30% and enhancing user engagement

Python Tutor

Jan. 2024 – May 2024

Ada's Team

Edmonton, AB

- Assisted students with entry-level Python programming and coursework by conducting structured tutoring sessions in a professional environment
- Explained fundamental concepts such as data types, conditionals, loops, and data structures through examples and practical exercises, resulting in improved understanding and proficiency in Python programming among students

Projects

Event Mate | *Java, Android Studio, Firebase*

Oct. 2024 - Nov. 2024

- Led a team of 6 members to develop a lottery based event management **Android application** by working on both frontend and backend, using **Firebase** for real-time database, image storage, and backend functionality.
- Implemented features such as QR code scanning, geolocation verification, and user role-based access control using object-oriented programming (**OOP**) principles in **Java**, achieving 90% unit test coverage across 50+ test cases, and documented the architecture with UML diagrams
- Managed project planning, task allocation and **sprint reviews** following **Agile** principles, completing 48 user stories, and utilized **GitHub** for 200+ commits to ensure seamless collaboration and a high-quality deliverable.

Chime | *React, Express, NodeJS, MongoDB, JWT, Socket.io, Tailwind, JavaScript, AWS*

Aug. 2024 - Sept. 2024

- Created a real time chat application using **Socket.io**
- Built secure REST API using **ExpressJS, NodeJS, JWT and MongoDB**
- Implemented user friendly frontend using **React and Tailwind**
- Integrated **AWS S3 and Lambda** to store and process chat media attachments

CampConnect | *JavaScript, NodeJS, ExpressJS, Bootstrap, MongoDB, Cloudinary, Passport*

Jun. 2024 – Jul. 2024

- Developed a web application for exploring, reviewing, and posting campsites with full CRUD functionality
- Created fully specified REST backend utilizing **ExpressJS, NodeJS, MongoDB, AJAX**
- Integrated **Cloudinary** for image storage in cloud
- Implemented user Authentication using **Passport** and Authorization mechanisms

Technical Skills

Languages: Python, C, JavaScript, Java, HTML, CSS, NoSQL, SQL, Bash

Libraries/Frameworks: React, NodeJS, ExpressJS, MongoDB, Bootstrap, SQLite, ROS2

Developer Tools: Git, Visual Studio, Postman, Android Studio, Powershell, AWS, Gazebo

Methodologies: AJAX, REST API, UML, Agile Principles, Relational Database