Gursamerdeep Singh

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Summary

I am a computer science student with strong proficiency in C++ and a growing skill set in Python and software development tools such as Qt (building c++ interface). Experienced in building projects involving object-oriented design, memory management, and algorithm optimization. Adept at translating problem requirements into efficient, maintainable code and applying core CS principles to diverse applications. Demonstrated ability to work independently and in teams, quickly adapt to new technologies, and deliver high-quality solutions in areas ranging from system-level programming to data-driven applications.

Education

ENROLLED — A.S. Transfer in Computer Science — Expected Graduation: 2026

Relevant Coursework: CS 102: Introduction to C++ Programming, CS 116: Object-Oriented Programming, CS 124: Data Structures, CS 113: Discrete Mathematics, CS 118: Introduction to Python Programming (Planned - Fall 2025).

Summer 2025: Generative AI (Enrolled, Exam Pro – Sponsored by Intel), C++: Data Structures and Algorithms Specialization by coursera.

Key Skills

Languages: C++ (strong), Python (beginner), HTML

CS Fundamentals: OOP, Polymorphism, Functions, Recursion, Algorithms

Tools: Git & GitHub, Visual Studio Code, Command Line (Linux/Windows)

Other: Debugging, Custom String Parsing, SVG Output

Projects

Scrabble Game
Built a Multiplayer Scrabble game in C++ that included word validation using a dictionary file, tile scoring, and a turn-based system. Focused on implementing game logic, dynamic memory management, and efficient string handling.

SVG Drawing Program
Designed and implemented a virtual `Shape` class with subclasses (`Line`, `Rectangle`, `Circle`). Utilized polymorphism and dynamic memory allocation to generate an SVG image with multiple shapes. Emphasized modular architecture, class design, and encapsulation.

Credit Card Validator
Implemented a credit card number checker using mathematical logic and control flow. Reinforced skills in loops, conditionals, and modular arithmetic with minimal library usage. Focused on algorithm efficiency and input validation.

Long Division Formatter
Simulated long division through console output without built-in formatting libraries. Manually managed spacing, digit alignment, and remainder tracking to showcase precision in console-based UI formatting.