

Sumant Dhir

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EDUCATION

Simon Fraser University

June 2026 (Expected)

Bachelor of Science, Computing Science - Software Systems

- **Relevant coursework:** Algorithms and Data Structures, Operating Systems, Networking, OOP

PROJECTS

Chess AI Project

C++, SFML, Negamax Algorithm

- Implemented the Negamax algorithm with alpha-beta pruning to evaluate board states and make optimal moves, ensuring challenging AI gameplay.
- Designed a visually appealing and responsive GUI using SFML
- Supported castling, en passant, and pawn promotion, while detecting game states such as check, checkmate, and stalemate.
- Optimized performance using a singleton ResourceManager for efficiently loading and managing textures and fonts.
- Enhanced user experience with visual move highlights, seamless game state transitions, and robust error handling for invalid moves and unexpected scenarios.
- Incorporated move ordering heuristics to improve alpha-beta pruning efficiency, reducing unnecessary node evaluations.

TeleportPlus (Minecraft Plugin)

Java, Bukkit API, YAML

- Developed a customizable Minecraft plugin to enhance player experience by adding teleportation functionality, improving server dynamics.
- Implemented /sethome and /home commands, allowing players to save and teleport to personal home locations, utilizing persistent data storage in YAML.
- Added a sign-based teleportation system, enabling players to set specific coordinates on signs for easy access to key locations, leveraging event-driven programming for user interactions.
- Utilized Bukkit API for game integration, Java's OOP principles for modular design, and configuration management to store player data efficiently.

HeartPlugin (Minecraft Plugin)

Java, Bukkit API

- Created a fun and interactive Minecraft plugin to add engaging player-to-player interactions, including custom "kiss" or "hug" actions with heart particles and sound effects, enriching in-game social dynamics.
- Implemented server-wide broadcast messages to notify players of special interactions, fostering a stronger sense of community within the game.
- Developed logic to detect and process multiple player events simultaneously, ensuring efficient handling and preventing duplicate notifications triggered by Minecraft's dual-hand detection system.
- Utilized Bukkit API to seamlessly integrate the plugin with existing server functionalities, employing best practices for event management and data handling.

WORK EXPERIENCE

McDonalds

May 2022 - Present

Crew Member

- Collaborated with a team to efficiently manage high-pressure tasks and maintain consistent quality.

TECHNICAL SKILLS

Languages: Java, C, C++, HTML, CSS, Python, YAML, JavaScript

Tools/Technologies: Git, Docker, Google Cloud Platform, TCP, UDP, Excel, REST APIs, JSON, Agile, Linux