

# Dineth Katanwala

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## EDUCATION

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### The University of Adelaide

July 2022 – July 2026 (Expected)

*Bachelor of Computer science (Advanced), Major in Artificial Intelligence GPA: 6.0/7.0*

- Expertise in algorithms and data structures, operating systems, data science, and AI related research

## PERSONAL PROJECTS

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### Personal Portfolio Website | HTML, CSS, JavaScript ([Link](#))

Feb 2025 – Present

- This project serves as an opportunity to learn and apply HTML and CSS while gaining hands on experience in web development.
- The website will feature a structured layout, interactive elements, and a responsive design to ensure accessibility across different devices.

### Chess3D | C++, CMake, Raylib

Feb 2025 – Present

- Developing a fully interactive 3D chess game with accurate piece movement, legal move validation and real time game state updates and turn based logic
- Utilizing Raylib's OpenGL based rendering pipeline to create an optimized and interactive 3D chessboard and pieces and implements data structures such as bitboards for board representation.

### Sudoku2D | C++, CMake, Raylib

Dec 2024 – Feb 2025

- A fully functional Sudoku game with real time feedback, auto solving and user input validation
- Utilised graph traversing algorithms for grid validation and memoised dynamic programming for auto solving to optimise recursive backtracking, improving the computational complexity
- Designed an interactive GUI using Raylib featuring adaptive game difficulty adjustments, real time error detection, save and load buttons, and dynamic grid rendering with smooth animations

### Bank++ | C++

Aug 2023 – Nov 2023

- Developed a Bank Management System using C++ to implement object-oriented programming concepts such as encapsulation, inheritance and polymorphism to ensure modularity and extensibility.
- Implemented secure account management features, including withdrawals, deposits, transfers, account creation and authentication, and other essential operations.
- Integrated file handling with structured data serialisation for persistent data storage of customer details and transaction history. Optimised system using input validation and exception handling.

## COMMUNITY INVOLVEMENT

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### Computer science, competitive programming, AI & Machine learning clubs

Dec 2024 – Feb 2025

- Regular participant in the competitive programming club, solving algorithmic problems by utilizing advanced data structures and algorithms such as dynamic programming and graphing algorithms.
- Active member of the AI & Machine learning and computer science clubs, engaging in coding workshops on software development, technical discussions hosted by world leading software companies.

### AUCPL 2025 – Competitive Programming Competition

Feb 2025

- Participated in a competitive programming competition as part of a three member team, solving algorithmic challenges under strict time constraints.
- Collaborated effectively to analyse problems, strategise solutions, and implement efficient algorithms, while fostering teamwork, time management, and critical thinking in a high pressure environment

## LANGUAGES & TECHNOLOGIES

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**Languages:** C++, Python, HTML, CSS, MATLAB, C, JavaScript

**Developer Tools:** Github, Visual Studio Code, Linux, Arduino

**Technologies:** SFML, Raylib