Dineth Katanwala

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EDUCATION

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

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 (Github)* **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 (Github)* **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

BankPlusPlus | *C++ (Github)* **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. Optmised system using input validation and exception handling.

COMMUNITY INVOLVEMENT

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

Languages: C++, Python, HTML, CSS, MATLAB, C, JavaScript
Developer Tools: Github, Visual Studio Code, Linux, Arduino
Technologies: SFML, Raylib