

# Aaditya Singh

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## EDUCATION

### University of Adelaide

Feb 2025 – Nov 2027 (Expected)

Bachelor of Computer Science | **GPA: 6.75/7**

Adelaide, SA

- **Relevant Coursework:** Algorithms Design & Data Structures, Object-Oriented Programming, Statistical Analysis & Modeling, Discrete Math

## EXPERIENCE

### Pepperpath

Jun 2025 – Present

Project Intern | React, TypeScript, Firebase, ReactFlow

Adelaide, SA

- Architected a node-based automation interface using React, TypeScript, and ReactFlow, enabling non-technical users to visually configure AI-powered workflows
- Integrated OpenAI GPT APIs to power customisable AI prompts, allowing users to generate automated insights, email notifications, and data-driven reports without coding expertise.
- Built Firebase NoSQL backend with real-time sync, secure authentication, and scalable database schemas for a growing client-base.

## PROJECTS

### Lorenz Predictability Horizon | Python, SciPy, Plotly

Dec 2025

- Implemented an interactive 3d simulation of the Lorenz system of differential equations to study sensitivity to initial conditions and parameter-driven transitions to chaos.
- Designed a sliding-window correlation metric to quantify loss in predictability between nearby trajectories over time.

### Royal Clash | C++, SFML

May 2025

- Led a team of 3 to build a 2D SFML real-time multiplayer game using modern C++ practices.
- Implemented a flexible Builder Design Pattern with smart pointers to manage the creation of 20+ interdependent classes, improving system modularity and scalability.

### RLock | Python Flask, SQLite, JavaScript

Sep 2024 – Oct 2024

- Developed a Flask web app that auto-detects user region and surfaces real-time streaming availability via APIs with direct provider links.
- Engineered intelligent title matching to correct user input and improve search accuracy.

## COMMUNITY INVOLVEMENT

### Software Team Member

Jun 2025 - Present

Adelaide Rover Team

- Collaborated within a 4-member team to design and implement the Water Prospecting Subsystem.
- Developing CAN bus communication and micro-controller firmware (C) to enable reliable prospecting sensor hardware integration and control.

### SIG Algothon 2025

Jun 2025 - July 2025

Susquehanna

- Ranked top 15% of global entrants in SIG's quantitative-trading hackathon.
- Implemented stock trading algorithms using Numpy, Pandas, Scikit including moving averages, regression, machine learning to optimize sharpe-ratio.

### External Relations Officer

Aug 2025 - Present

Society of Quantitative Analysis and Data Science (150+ members)

- Organised an industry panel with 50+ registered attendees by coordinating speaker outreach, managing event logistics, and executing targeted promotion across campus and social channels.

### Competitive Programming League

Mar 2025 - Nov 2025

Adelaide Competitive Programming Club

- Competed in a team of 3, ranked 10th place in the University-wide league under strict time constraints.
- Solved complex algorithmic problems while ensuring optimal program runtime.

## TECHNICAL SKILLS

**Languages:** C++, C, Python

**Frameworks & Libraries:** React, Tailwind CSS, ShadCN, ReactFlow, Flask, SFML, SciKit, NumPy