

# Phuc Nguyen

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## Education

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### University of Adelaide

Bachelor of Mathematical and Computer Sciences (GPA: 6.75/7.00)

Expected Nov 2025

Adelaide, South Australia

- **Relevant Coursework:** Object Oriented Programming (HD 92), Mathematics IA and IB (HD 97), Statistical Analysis and Modelling (HD 94), Matlab and C (HD 94), Financial Modelling III (D 80)

### Glenunga International High School

South Australian Certificate of Education (ATAR 99.35/99.95)

Graduated Nov 2022

Adelaide, South Australia

## Professional experience

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### Topcon Agriculture | Software testing intern

Nov 2023 – Jan 2024

- Accomplished the automation of a regression testing process for farm equipment apps using **Squish** and **Python** scripting, replacing the need for manual testing which streamlined the entire testing process by **95%**.
- Accomplished the preparation of hardware by **mounting proprietary operating systems** on twenty SD cards that were distributed to clients, alleviating workload for senior engineers and **liberating company time and resources**.

### Mathematics tutor | Mathematics tutor for high school students

Jan 2023 – Ongoing

- Accomplished developing good study habits and learning techniques in **all three students**, measured by a **rapid improvement** through multiple grade bands and up to **A+**.
- Consistent student performance was enabled by placing heavy emphasis on conceptual understanding and problem solving rather than memorisation.

## Projects

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### Agriculture Game | C++, SFML

Aug 2023 - Sep 2023

- Accomplished the development of a farm management system in a farm simulator game using **object oriented programming principles**.
- Orchestrated the project's structural design, leveraging prior experience with graphics to work with **C++ SFML graphics library**.
- Demonstrated astute decision-making by assessing project scope, time constraints, and the importance of showcasing specific concepts for the **final result of 100%**.

### Height map viewer | Matlab

April 2023 - May 2023

- Successfully developed a wire frame height map viewer using Matlab that **enabled viewing of topographical data** from regions including the **Himalayas**, and various other mountain ranges.
- Optimised the program by utilizing **Bresenham's line algorithm** which avoided floating point arithmetic, speeding up frame load times by **3x** when compared with the naive and Matlab-provided line drawing function.

### 3D Ray Caster | C, Minilibx

Dec 2022 - Jan 2023

- Developed a 3D ray caster program in C using the Minilibx graphical library as a passion project for exploring 3D computer graphics.
- Instrumented the rendering of coloured objects and realistic looking shadows from a dynamic camera's perspective by self-implementing low-level vector calculations such as normals and intersections.

## Skills and Technology

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**Programming Languages:** C (Proficient), C++ (Proficient), Matlab (Proficient), Python (Novice), R (Novice)

**Technologies:** Squish, Linux, SFML, Excel, Git

**Concepts:** Object oriented programming, algorithms, data structures, linear algebra, differential equations, statistical modelling, hypothesis testing, probability

## Community Involvement and Volunteering

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**Competitive Programming Club (Adelaide University):** 5th place out of 34 teams in South Australia

**South Australia Judo State player :** bronze -66kg Australia Nationals 2023

**Volunteer Judo Coach:** Volunteer judo coach at the Adelaide University Judo Club, +80 juniors, +50 adult members

**Committee member for Adelaide University Judo Club:** club admin tasks, committee meetings, events organising

**University Blues Award 2023:** Awarded for significant service to a University sporting club and sporting achievement