

Kanay Gupta

Sydney, NSW, 2155 — kanayg@icloud.com — 0480 121 598 — Portfolio Website

EDUCATION

University of New South Wales (UNSW)

Bachelor of Computer Science

Achieved Faculty of Engineering Dean's Honours List.

February 2023 — December 2025

WAM: High Distinction

Carlingford High School

High School Certificate

Graduated: September 2022

ATAR: 98.50

EXPERIENCE

Cluey Learning

High School Tutor

April 2023 - Ongoing

- Tutored students ranging from Year 9 to Year 12 in various concepts from Mathematics Standard to Mathematics Extension 1 resulting in a significant improvement in their academic performance.
- Adapted teaching techniques and approaches to accommodate diverse learning styles and abilities, resulting in increased student engagement and understanding.
- Provided feedback to supervisors on the effectiveness of the provided teaching materials, leading to continuous improvement and refinement of the curriculum.

PROJECTS

Ray Tracing Engine from Scratch in Rust

- Designed and implemented a multithreaded ray tracing engine in Rust entirely from scratch, without relying on external crates, including custom modules for vector math, ray-object intersection, camera projection, and lighting models.
- Utilized Rust's native concurrency primitives to parallelize the rendering pipeline across multiple threads, significantly improving performance on multi-core systems.

Health Tracking Web App (Hackathon Project)

- Collaborated in a team to build a responsive health tracking website using React for a hackathon, focusing on usability and clean design across devices.
- Implemented key features including a natural language food-to-calorie estimator powered by a large language model (LLM), a personalized target calorie tracker, and a blog page for sharing health and nutrition content.

Aim and Wall Hacks for CS:GO

- Engineered advanced game hacks using Python-based memory manipulation, leveraging reverse engineering techniques to modify game behavior in real time.
- Developed and integrated multiple advanced features, requiring an in-depth understanding of the game's internal mechanics, memory structures, and event handling.

Portfolio Website - <https://kanay2005.github.io/portfolio-website/>

- Developed a responsive portfolio website using React.js, Next.js, and Tailwind CSS, featuring optimized image handling, server-side rendering, and a modern mobile-friendly UI for fast, accessible performance and scalability.

Real Time Tetris Bot

- Developed an AI-powered Tetris bot using OpenCV and PyAutoGUI that detects falling blocks in real-time and executes optimal moves faster than human reaction, leveraging edge detection and template matching for instant decision-making.

SKILLS

- **Skills:** Python, Rust, C, C#, JavaScript, TypeScript, React, Next.js, Tailwind, HTML, CSS, Bash, Linux, SQL, PostgreSQL, Java, LaTeX, Git, Unity, MS Office Suite.
- **Languages:** Native in English and Hindi.
- **General:** Strong Decision Maker, Complex Problem Solver, Team Player, Attentive to Detail and Organised.