IAN CHUA RONG BIN

+65-9298-0585 | iancrb00@gmail.com | www.linkedin.com/in/ian-chua-rong-bin | peachismomo.github.io

EDUCATION

Bachelor of Science with Honours in Computer Science in Real-Time Interactive Simulation

Singapore Institute of Technology, DigiPen **(CGPA: 4.16/5.0)**   **Aug 2022 - Aug 2026 (Expected)**
- Relevant coursework in Computer Graphics, Shader Programming, Software Engineering, Operating Systems, Computer Networks and Data structure and algorithms

INTERNSHIP EXPERIENCE

Bake (React, TypeScript, Node.js, GitHub Actions, Webpack)   **May 2025 - Apr 2026**
Software Development Intern
- Maintained and modernized a large production web platform (React + Node.js), refactoring legacy code and upgrading the frontend toolchain (CRA 4 ➜ Webpack 5).
- Implemented security and compliance improvements (consent handling, validation) and built backend APIs for business-critical workflows.
- Diagnosed and resolved cross-stack issues across frontend and backend, improving stability and developer productivity.

Teaching Assistant (Computer Science) - DigiPen Institute of Technology   **August 2023 - August 2024**
- Supported over 200 students in understanding basic to complex programming, math and game implementation concepts through lab sessions and tutoring.

MQ Spectrum Pte Ltd (C# WPF, ASP.NET)   **Oct 2018 - Apr 2019**
Software Engineering Intern
- Developmented a secure file transfer system using RSA and AES encryption algorithms.
- Developed both front-end (web and desktop) and back-end API components of the file transfer system using ASP.NET.

ACADEMIC PROJECTS

Invenio Engine   **October 2024 - Apr 2025**
Custom 3D Game Engine (C++, Embedded C#), Technical Lead
- Led a team of 8 to design and build a modular 3D engine with a Mono-based scripting layer, physics (PhysX), asset pipeline, and editor tooling.
- Architected a multi-pass deferred renderer with PBR, multi-light shadow mapping, HDR tone mapping, auto-exposure, bloom, and color grading.
- Drove integration of core libraries (PhysX, Assimp, Mono, DirectXTex) and upheld code quality through reviews, conflict resolution, and cross-system debugging.

Ugly Duckling   **Jul 2024 - Aug 2024**
Render Graph based rendering engine (C++, OpenGL, CMake)
- Built a real-time procedural terrain system for large-scale 3D landscapes, balancing performance and visual fidelity using Poisson Disk Sampling and Delaunay Triangulation for stable, natural mesh generation.
- Used Perlin noise and seed-based generation to produce diverse, infinitely reproducible terrains.
- Optimized for real-time performance with parallelized normal computation and efficient shading.

Ugly Duckling   **Nov 2025 - Ongoing**
Render Graph based rendering engine (C++, OpenGL, CMake)
- Built an API-agnostic rendering engine around a RenderGraph, enabling future Vulkan/Metal backends without core rewrites.
- Implemented deferred PBR rendering and a custom type-reflection system for serialization and editor tooling (ImGui).

SKILLS

- **Languages:** English, Mandarin.
- **Programming Languages:** C, C++, C#, Python, TypeScript, JavaScript, GLSL
- **Frameworks & Libraries:** React, Node.js, Express, Mono, .NET Framework, OpenGL, WebGL2, ImGui,
- **Tools & Platform:** Git, GitHub Actions, CMake, Premake, MSBuild, Webpack, Vite, SQL, Redis, Docker