

WONG PEI XIAN

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Full-stack software developer passionate about computer graphics and hockey. Confident in building data pipelines and services in different languages and frameworks. Seeking hands-on, small team environment to work on sport analytics and visualization.

EDUCATION

National University of Singapore

Aug 2020 – May 2024

Bachelors of Computing (Comp. Sci.), Focus in Computer Graphics & Games, Parallel Computing [GPA: 4.83, DEAN'S LIST]

Singapore

SKILLS AND RELEVANT COURSEWORK

General Programming Languages:

C++, Python, Rust, Javascript/Typescript, C, C#, Java

Graphics/Visualization:

OpenGL, CUDA, DirectX11, Vulkan, WebGL (three.js), GLSL, HLSL

Databases: MongoDB, PostgreSQL, kdb (q)

Monitoring: OpenTelemetry, Prometheus, Grafana

Web: React Node, ExpressJS, SvelteKit, HTML/CSS

PORTFOLIO

CapSized Hockey: A salary cap and roster tracker for NHL | [SvelteKit \(Typescript\)](#), [MongoDB](#), [Python](#)

since Jun 2024

- Full stack development of a clean, modern interface tracking active and historical player salary breakdowns, trades, team rosters and lines etc.
- Working on a new component [statsized](#) providing gRPC data streams and services for physical computations.
- UI for administrators to maintain data without code or scripting, now extending the interface into a GM (General Manager) mode.

SyNeRFgine: Modelling shadow effects of mesh objects in Neural Radiance Fields (NeRFs) | [Python](#), [C++](#), [CUDA](#)

Jun 2023 – Apr 2024

- Proposed a method to render shadows in a scene with both machine-learning driven volume-rendered NeRFs with traditional mesh objects.
- Built an engine that places virtual objects in NeRF environments with correct direct/indirect lighting interactions.

Doodle's Diary – A tower defence game | [Unity](#), [C#](#), [HLSL](#)

Feb 2022 – Nov 2022

CodeITSuisse Challenge 2021 | [Python](#) | Team 6th

Sep 2021

A New Lower Bound for Young's Cosine Series [FLW19]

Jul 2017 – Feb 2019

WORK EXPERIENCE

Squarepoint

Sep 2024 – Present

Software Developer | [Python](#), [C++](#), [kdb](#)

Singapore

- Designing new and migrating legacy flows responsible for maintaining back-office records of trades.

Squarepoint

Jan 2024 – Apr 2024

Software Development Intern | [C++20](#), [OpenTelemetry](#), [Prometheus](#), [Grafana](#), [proto3](#)

Singapore

- Implemented metrics collection for a department-specific development framework, enabling performance in Grafana.
- Affects all in Python and C++ programs in department, critical part of the ongoing company mandate to scale volume by 100x.

Ubisoft

Aug 2023 – Nov 2023

Technical Art Intern (Assassin's Creed: Shadows) | [C#](#), [C++](#), [Python](#)

Singapore

- Built in-engine tools with Windows WPF UI (C#, XAML) for speeding up artists' workflow.
- Supported asset management, validation and documentation with core development team.

EAS-AI

May 2023 – Aug 2023

Backend Software Developer, DevOps, MLOps | [Rust \(tokio, axum, criterion\)](#), [PostgreSQL](#), [Python \(locust.io\)](#)

Singapore

- Designed and built a search engine for large document collections ingested from companies' existing internal databases.
- Combined Machine Learning models and custom implementations of traditional lexical search algorithms for indexing of documents.
- Implemented the pipeline for document ingestion, processing, encoding, storage and lookup, ensuring the scalability, performance of the multithreaded server and cross-domain accuracy of the search engine.

Google

May 2022 – Aug 2022

Intern Backend Developer | [Python](#), [gRPC](#)

Taiwan (remote)

- Implemented a bug diagnosis RPC service to parse modem device logs.

BODYX Productions

Dec 2021 – May 2022

Fullstack Web Developer, DevOps | [ReactTS](#), [MongoDB](#), [Websockets](#)

Singapore

- Designed, built and deployed a real-time web app from scratch, supporting chat functionality and interactive room controls designed for experiential theatre, REST API for user management and integration with EventBrite.

Teaching Assistant (Various)

since Jan 2022

Student Tutor | [Intro to Graphics](#), [Intro to Algorithms](#)

Singapore

- CS3211 Parallel and Concurrent Programming** – Designing assignments for maximizing parallelism in a restaurant simulator.
- CS4247 Graphics Rendering Techniques** – Includes multi-pass rendering, deferred shading, shadow mapping, path tracing, PBR, radiosity.
- CS3241 Computer Graphics** – Includes graphics pipeline, rasterization, texture mapping, raytracing [[Slides](#)].
- CS2040S Data Structures and Algorithms**

LEADERSHIP

ExxonMobil Campus Concerts (EMCC) Crew

Aug 2022 – May 2023

Training Director (Nominated for Student of the Year – Tan Eng Kiam Awards [[link](#)])

National University of Singapore

- Planned and coordinated a comprehensive training program in technical theatre management and technology, in particular stage lighting.

PUBLICATIONS

[FLW19] J. Fong, T. Lee, and P. Wong. "A functional bound for Young's cosine polynomial". In: *Acta Mathematica Hungarica* 160 (June 2019). doi: 10.1007/s10474-019-00960-3.