Last Updated on 13th August 2019

Raymond Wan

A software engineer passionate about computer graphics and real-time systems

EDUCATION

UNIVERSITY OF WATERLOO

Bachelor of Computer Science (BCS)
Joint Honours Computer Science and Statistics
Sept. 2013 – Apr. 2018 | Waterloo, ON

LINKS

Website:// raywan.net
Github:// raywan
LinkedIn:// rayxwan
Email:// rayxwan@gmail.com

SKILLS

PROGRAMMING

C • C++ • GLSL • Go
Java • Python • JavaScript • R

PLATFORMS

macOS • Linux • win32

LIBRARIES

OpenGL • SDL2 • GLFW • imgui
Love2D • gRPC • Node.js • React.js
Vue.js • ggplot2 • matplotlib
XGBoost • scikit-learn

DATABASES

PostgreSQL • MySQL
DynamoDB • Redis

TOOLS

CMake • make • Visual Studio • gdb
Renderdoc • LLVM • perf • Git

INFRASTRUCTURE

AWS • Docker • Jenkins

COURSEWORK

UNDERGRADUATE

- Real-time Programming
- Distributed Systems
- Operating Systems
- Computer Architecture
- Theoretical Machine Learning
- Forecasting
- Mathematical Statistics
- Sampling and Experimental Design

INTERESTS

- Real-time Systems
- Graphics Programming
- Game Engine Programming
- Tools Development

WORK EXPERIENCE

KIK INC. | Software Engineer

Aug. 2018 – Present | Kitchener, ON

- Developed and owned a machine learning model microservice using Go, gRPC, and Redis, improving robustness and end-to-end 99th percentile latency by 100x
- Created an anti-spam tooling suite in Go, Python, and JavaScript used by all data scientists and increased productivity of anti-spam tasks by a measurable 2x
- Completed and improved upon a spam rule DSL in Java which improved an existing slow process and increased rule iteration speed

SCOTIABANK | Software Engineer (internship)

Sept. 2017 – Dec. 2017 | Toronto, ON

- Implemented a revenue tracing service in Python and using MIT project Ground, allowing data scientists to better track where their data comes from
- Optimized the speed of an internal Python/MySQL recommendation engine by implementing a new matching algorithm, accelerating task completion for bankers

CAPITAL ONE | Data Scientist (internship)

Jan. 2017 – Apr. 2017 | Kitchener, ON

- Created a credit over-limit prediction model, which proactively helped users budget their credit and increased mobile app usage time
- Developed an app review data pipeline using Node.js and AWS Lambda, automating an existing process allowing data scientists to focus on other tasks

GIVERY INC. (株式会社ギブリー) | Back End Engineer (internship)

May 2016 – Aug. 2016 | Tokyo, JP

- Architected a complete data pipeline using Python, Luigi and AWS, allowing data analysis for the first time in the company

PROJECTS

RW | Cross-platform C/C++ libraries for games and graphics

Feb. 2019 – Present | **Github**

- Single-header libraries written from scratch for linear algebra (utilizing SIMD), high-resolution timing, memory management, etc.
- All personal game and graphics projects utilize this collection of libraries

RENDER3D_01 | Simple 3D Renderer using SDL2 + OpenGL

July 2019 – Aug 2019 | **Github**

- Deferred Rendering, Physically Based Shading, Image Based Lighting, quaternion-based camera control, OBJ model loading, and more

T-ENGINE | C/C++ Tetris Game Engine (2009 Official Guidelines)

June 2019 – July 2019 | **Github**

RAYS | Monte Carlo Path Tracing Renderer

Dec. 2018 | **Github**

- Multi-threaded rendering, acceleration structure (BVH), Lamerbertian BRDF, importance sampling, mesh rendering, procedural textures, and more

RTOS | A real-time operating system built in CS 452

Jan 2018 – Apr. 2018 | **Github**

- Developed a complete microkernel on an ARM-based SoC (EP93xx)
- Built a real-time operating system from scratch that controls multiple trains