Robin Leman

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WORK EXPERIENCE

Electronic Arts - Respawn Entertainment July 2023 - Present
Software Engineer - ReSource Engine *Vancouver, Canada*

- Designed and implemented an Entity-Component-System library on top of ReSource engine with enTT, improving gameplay performances and feature scalability.
- Implemented and optimized cross-platform networking code in an ECS architecture for client-server replication, interpolation and prediction, significantly reducing memory usage.
- Designed a performant runtime type reflection system with entt::meta, leveraging modern C++ and meta-programming, utilized in networking serialization.
- Built an automated testing framework for specification tests, improving system stability and documentation.

Software Engineer - Unreal Engine 5

- Developed core gameplay systems, focusing on player controls, movement, camera, and combat mechanics; enhancing player feel, responsiveness, and mobility.
- Built and maintained performant and scalable weapon and combat systems, utilizing a data-driven framework; enabling quick iteration for prototyping.

Relic Entertainment - SEGA June 2022 - June 2023
Associate Programmer - Essence Engine 5, Unreal Engine 5 *Vancouver, Canada*

- Implemented and maintained gameplay systems, shipping *Company of Heroes 3* on PC and consoles.
- Developed data-oriented gameplay systems within an Entity-Component-System architecture based on enTT, focusing on cache efficiency for large-scale simulations.
- Designed and implemented a QuadTree spatial partitioning system and State Machine data structures, concurrently simulating 1600+ entities in a highly parallelized environment.
- Optimized multi-threaded StateTree data structures by 25%+, implementing highly performant squad-based AI behaviors.

Microsoft - The Coalition Xbox May 2021 - August 2021
Software Engineer Intern - Unreal Engine 5 *Vancouver, Canada*

- Designed and implemented procedural collision volumes and ragdoll states, cooperating with Physics Team.
- Profiled and analyzed Chaos and Nanite systems, running a comparative analysis with Havok and PhysX to optimize performance on Xbox and PC.

Ubisoft June 2020 - August 2020
Generalist Programmer Intern - Snowdrop *Montreal, Canada*

- Designed a high-performance, voxel-based buoyancy simulation algorithm in an ECS architecture, applying numerical integration methods to simulate real-time physical models.

EDUCATION

McGill University September 2019 - May 2022
B.S. in Physics and Computer Science. CGPA: 3.82/4.00 *Montreal, Canada*

- President of GameDev McGill. Led a 10+ exec team to organize events and hackathons for 150+ members.

PROJECTS

3D Rendering Engine for the Visualization of Debris Disks | C++, OpenGL

- Built a software to visualize debris disks in 3D, used by the McGill Space Institute in the research of exoplanets.
- Optimized the engine with multi-threading and GPU programming, supporting different scattering functions.

SKILLS

Programming Languages: C++, Python, C#, C, Java, Bash
Tools & Libraries: Unreal Engine 5, Unity, OpenGL, Perforce, Git
Languages: English, French (Bilingual)