

Robert S. Christensen

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Education and Awards

Champlain College, Burlington, VT — 2019-current / Anticipated graduation May 2023

Bachelor of Science — Game Programming

Headwaters School, Austin, TX — 2013-2019 / Graduated *magna cum laude* May 24th, 2019

Headwaters School Honor Roll — 8th-12th Grade

Distinction in Science — 12th Grade

Relevant Skills

- **Java — 9 years, Fluent**
Strengths: interface-based architecture, polymorphism, syntax nuance, generics, reflection
- **Software Architecture — 7 years, Fluent**
Strengths: decoupling, event-based design, data-oriented design, inheritance, abstraction
- **Game Programming — 6 years, Proficient**
Strengths: combat systems, character controllers, general gameplay, serialization
- **C# for Unity — 5 years, Fluent**
Strengths: component-oriented design, inspector/tools programming, object lifecycles
- **C++ — 3 years, Mostly fluent**
Strengths: RAII, object lifetime safety, templating, modern STL, functional programming
- **Git — 3 years, Somewhat proficient**
Strengths: timeline management, merge conflict resolution
- **Graphics Programming — 5 years, Somewhat proficient**
Strengths: GLSL, spheretracing, volumetric raymarching, particles, Vulkan, mesh generation
- **Python — 5 years, Somewhat proficient**
Strengths: automation, testing, data manipulation, OpenCV

Work Experience and Internships

Game History Archivist — Burlington, VT

Sep 2019-Current — Avg. 10 hours per week

Team of four working to restore old game consoles, digitize and emulate ROMs, write user guides for the physical and digital playing of games, and make all the above freely available to students for recreational and educational use.

Independent Project in Game Programming — Burlington, VT

May 2021-Current — Avg. 15 hours per week

Developed a pair of character controller frameworks: one animation-driven and suited for fighting games; and one script-driven suited for RPGs. Developed a related toolset that displays acceleration

curves and can predict jump paths and timings, to reduce level design time. Developed a related event-based combat system.

Project in Game Programming — Burlington, VT

Jan-May 2021 — Avg. 12 hours per week

Developed a game framework using C++ and Allegro5. Features included RAII module and resource management, lazy asset loading and dependency resolution, and an input system posting both to the event bus and to functional-style callbacks.

Project in Game Development and Programming — Remote

Aug-Nov 2020 (9 weeks) — Avg. 8 hours per week

Developed a game framework for Bukkit (Java), based on Unity engine. Worked on core ticker and renderer, error handling, debugging tools, utilities, and networking.

Project in Graphics Programming — Austin, TX

Nov-Dec 2020 (5 weeks) — 55 hours

Explored rendering a volume using raymarching, or approximating density using additive-blended particles on a color ramp. Applied to clouds/exhaust, fire, and fractal noise fog.

Project in Game Development and Programming — Burlington, VT

Jan-Jul 2020 (20 weeks) — Avg. 6 hours per week

Collaborative development of a 2.5D game with combat focus. Worked on goal-oriented AI, dialogue system, tools, and event-driven combat system.

Independent Project in Software and Systems Engineering — Austin, TX

Oct 2018-Jan 2019 — 18 hours

Prototyped a Google Suite-based cafeteria order system. Design goals included ordering online to reduce line length, ordering ahead to spread out peak traffic, and allowing automation of daily lunch payments.

Independent Project in Software Engineering — Austin, TX

Mar 2018 (8 weeks) — 10 hours per week

Using Java, created a visual programming editor for Java, focused on portraying time flow and data flow. Used reflection to search for classes and methods.

Independent Project in Game Development — Austin, TX

2016-2017 (16 weeks) — 2 hours per week

Created a modular magic system plugin using combo-style selection controls for Minecraft. Spells dynamically reassignable using reflection to enable user addition of custom spells.

Independent Project in Game Development — Austin, TX

2016 (15 weeks) — 40+ hours

Created a system in Minecraft to give items commands executed on various triggers, and durability when used in this way.

Independent Project in Software and Optical and Electrical Engineering — Austin, TX

Mar 2016 (2 weeks) — 60+ hours

Engineered and prototyped a holographic projector, using a high-power green laser, motorized optics, and a Texas Instruments BeagleBone Black.