Jacob McPeak — Software Engineer

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SKILLS

LANGUAGES
C / C++ / C#
Javascript (NodeJS)
SQL
Python (Familiar)
Lua (Familiar)
Java (Familiar)

GAME NETWORKING TECH
Socket Programming
Latency/Bandwidth Profiling
UDP and TCP
State Replication
Client/Server Topology
Custom Reliability Layers

TOOLS
Visual Studio
Memory Debuggers
Doxygen
Perforce and Git
MSVC, GNU, Clang
Azure and AWS

MISC.
Unity3D and custom C++ engines
Object Oriented Design
Data Oriented Design
Linux operating systems (Ubuntu, Mint)
Data Structures and Algorithm Analysis
Nintendo SDEV

LIBRARIES
WPF, ImGui, Qt
Mono
PhysX

PROJECTS

TECHNICAL LEAD AND NETWORK ENGINEER (THE PILGRIM: 4 TEAM MEMBERS) — JUNE 2018 - PRESENT
- Developed game replay system in Unity which automatically uploads replays to a server where a designer can download and view to make the most of remote playtesting.
- Designed server infrastructure to support a drop-in drop-out multiplayer game using Client/Server topology.
- Implemented state replication on a Unity client over UDP with a custom Ubuntu C++ server on AWS.
- Created level streaming tools that enabled designers to iterate on individual gameplay segments that were later "stitched" together with the rest of the level and other background objects placed by artists.

TECHNICAL LEAD (DIGIPEN GAME-ON BELLVUE: 4 TEAM MEMBERS) — JUNE 2017 - PRESENT
- Developed core gameplay loop and networking integration for an online mobile resource management game using RFID readers attached to android tablets via BlueTooth.
- Managed connection with 3rd party company who makes the RFID hardware and server software.

TECHNICAL LEAD (OUTBREAK: 3 TEAM MEMBERS) — NOVEMBER 2016 - PRESENT
- Redesigned feature development process to better parallelize work with growing technical team and to improve communications between the technical team and the ARG design team.
- Directed website redesign to bring the web app up to current industry standards using NodeJS and Express.
- Organized feature development between 3 developers to ship a product in a 2 week development window.

ENGINE AND TOOLS PROGRAMMER (OUTLIER: 18 TEAM MEMBERS) — JUNE 2017 - APRIL 2018
- Spearheaded development on a multi-purpose editor in C++/C# and WPF to enable 3 designers and 5 artists to create content in engine.
- Integrated the Mono C# runtime to allow designers to write gameplay scripts in C# which improved gameplay iteration time.
- Developed python scripts that used clang to build an AST for our code base that was then used to generate serialization and reflection code.
- Developed pipeline to automatically generate Recast NavMeshes using PhysX information from game levels.

TECHNICAL LEAD AND PRODUCER (Synthalaxy: 6 Team Members)   JUNE 2016 - APRIL 2017

- Created a level editing tool in Qt to streamline level development for 2 designers.
- Programmed a Python script to generate boiler plate code for a graphics programmer.
- Designed a custom type introspection system in C++ to automatically serialize C++ types using Macros and Template metaprogramming.
- Made Executive decisions on technical problems.
- Delegated tasks out to the other 5 members on the team.

PROFESSIONAL EXPERIENCE

INNOVATIVE EDUCATION MANAGEMENT   JUNE 2018 - AUGUST 2018

- Coordinated integration between older bespoke student record system and new Google administration technologies to allow students and educators to easily interact using the Google suite.
- Led code review meetings to enforce security standards and improve code maintainability.

PROJECT FUN   JULY 2017 - SEPTEMBER 2017

- Developed and executed lesson plans to teach approximately 30 8th-12th grade students Java.
- Delegated work between myself and 4 TAs to give students maximum 1-on-1 attention.
- Managed classroom behavior.

EDUCATION

DIGIPEN INSTITUTE OF TECHNOLOGY   EXPECTED GRADUATION: APRIL 2019

- Bachelors of Science in Computer Science and Real Time Interactive Simulation with a Minor in Mathematics.