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Ian Overgard Resume

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Skills/Knowledge

Languages	APIs/Libraries/Standards	Tools/Platforms	Databases & Servers
- C/C++ - C# - Java - Javascript - Typescript - Python - Smalltalk - HLSL & GLSL - F#	- OpenGL ES2 (& WebGL) - Three.JS - React - Emscripten/WASM - HTML5 & CSS, SASS, LESS - Angular (Typescript) - Qt 5, WinForms - Vulkan	- Visual Studio - Unity3D - IntelliJ - XCode - Maya - Blender - Photoshop - Kubernetes - Docker	- MS SQL Server - MongoDB - NodeJS - Nginx - IIS/ASP.NET - PostgreSQL

Education

Bachelors Computer Science, Colorado State University, Fall 2008.

Employment History

Levels Beyond/Signiant (March 2021 - July 2022) - Principle Software Architect

Created a microservice architecture for the next generation of Reach Engine using Typescript/NodeJS and Kubernetes deployed to Amazon EKS. Also worked on updating our existing code to run in a Kubernetes environment, and created a system to allow distributed rendering jobs across workstations.

HighArc (May 2020 - November 2020)

Worked on a CAD tool for designing houses with parameterized inputs, allowing for generic house designs to be customized based on user input. The work involved a lot of 3d geometry code, UX design, and frontend typescript code in a small startup.

Anark (May 2019 - May 2020)

Worked on modernizing the technology stack to run in the cloud based on kubernetes, with a React frontend and a NodeJS backend.

ClearCaptions (December 2018 - April 2019)

Worked on modernizing the architecture of the automated call distribution platform to use Docker and Kubernetes in order to provide more uptime and reliability guarantees, also worked on the automated speech recognition system.

Backflip Studios (May 2016 - October 2018)

Worked on DragonVale World and Dragonvale 1.

For DVWorld I was responsible for creating and optimizing visual effects in Unity3D for mobile devices (water flowmaps and wind, for instance, along with stencil effects for underwater dragons). Worked on dragon AI and performance tuning; along with general C# coding tasks (wrote the loading screen and tools for visualizing coroutine execution, for example).

On DV1 I was on a team of about 6 engineers writing C++, and my role was as a generalist so I touched almost every system. I worked with the artist to write visual effects (primarily specialized shaders for certain dragon types), optimized our graphics as much as possible by optimizing our shaders and switching to VAO's and VBO's,

moderned our ruby/python content conversion pipeline, wrote some event-related minigames along with a physics simulation for dice rolling. I also added new capabilities to our server for customer service and QA, along with a testing framework. Besides that, I wrote a shader-cross compiler to compile shaders from GLSL to Maya OGSFX files and Unity ShaderLab files and Metal shaders, and trained the other engineers in techniques for writing GLSL shaders. I also added a lot of UX quality of life improvements for our players, by taking the initiative to simplify menus that were previously pain points for our players.

Autodesk (May 2014 - May 2016)

Responsible for graphics and application development on FormIt (http://formit360.autodesk.com/), a 3D modeler designed to run on iPad, Android, Web, and Windows Touch with real-time collaborative editing features and a custom BREP-based modeling kernel designed to be small and lightweight for web. My job involved a lot of cross platform OpenGL ES2.0 and WebGL graphics development, such as creating a robust stencil shadow system that could correctly handle non-manifold geometry (architects tend to prefer precise shadows vs. soft shadows from shadow maps), adding support for ambient occlusion, along with also updating the graphics to support the autodesk material library with things such as normal maps and reflections. I also worked on many general purpose features. Other aspects of the application I've been involved with include writing the collaboration server in NodeJS (for interactive collaborative editing on a model), sketchup import and FBX export, and a very significant chunk of the Windows QT-based interface.

Datu Health (November 2013 - May 2014)

Worked as a full stack developer on web applications primarily written in python and javascript with a java backend, with tornado, spring, and backbone.js being our primary web frameworks; and both SASS and LESS for frontend styling.

Markit On Demand (January 2009 - November 2013)

My primary accomplishment was creating a distributed searchable error reporting system across hundreds of servers for dealing with unexpected website errors, and then being able to reproduce the errors locally in a debugger by recreating the entire state of the application at the time of the error. It started as a side project, but quickly became so popular that it became indispensable to a development team of about 200 people. I also worked in the web engineering team on the proprietary web framework we use across client websites, as well as on cryptography and website authentication/security.

USGS/Colorado Water Resource Research Institute (Internship, Fall 2007 - January 2009)

I created 3d graphical visualizations of watershed and other geological data integrated into NASA's World Wind using Java and OpenGL.

Northern Natural Gas (Internship -- Summer 2005 & Summer 2006)

Created visualizations for gas pipeline systems in Smalltalk. The visualization was essentially a directed graph, and I used a spring/magnet-based iterative layout system which created a somewhat amusing explosion/implosion effect when it loaded. I also created custom bindings to OpenGL in order to do more advanced effects since at the time visualworks lacked any opengl bindings.

Other/Open Source

- Wrote a Unity3D plugin on the asset store (For doing street layouts)
- Created a reasonably useful SVG implementation in Python/OpenGL (http://www.glsvg.com/)