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Education

University of California, Riverside

Bachelor of Science, Mechanical Engineering
Minor, Computer Science

Sept 2008 - Dec 2013

GPA 3.14

GPA 3.63

Professional Experience

Applied Invention, Geospatial and Full Stack Development

June 2014-Present

Geospatial Game Engine Development:

Worked on an in-house c++ geospatial game engine that's used for military type simulations
Modified terrain system and UI to allow users to switch terrain layers dynamically
Rewrote water shader to fix z-fighting and to incorporate bathymetry data
Built a hotkey menu system that allows users to customize and define new hotkeys
Added numerous algorithms like a semi-realistic radar detection or 3D network visualization
Developed data ingestion mechanisms for real and simulated data
Adding an eye tracking system to engine and implemented Kalman filter to smooth user eye data
Other things such as writing camera classes, diagnostic tools, AutoHotKey scripts, demos

Full Stack Development:

Rapid gui development using latest web technologies Sass, AngularJS, Grunt, jQuery, etc.
Front End development for machine learning training data generation website
Wrote file system diagnostics website for mapserver
Created new mapservers, custom RHEL isos, automated new server process

FrackOptima, Part-time Full Stack/ Python Developer

May 2016-Present

Write, test, and debug code for Fracking application built using Python and Pyside
Improved company website that uses AWS, Flask microframework, CSS, jQuery, Jinja2

Personal Projects

Web Development (JavaScript, CSS, HTML, PHP, Python)

Built numerous static websites using the latest web technologies
Built personal portfolio from scratch with custom JavaScript games

Super Mario Brothers Engine (c/c++ and SDL)

Capable of loading, saving, running 60 FPS, changing audio effects
Uses OO programming, containers, memory management, and Threading

Desktop Music Player (Java and JavaZoom)

Designed like iTunes but optimized for playlist management
Uses multithread synchronization, object serialization, regex filters, swing components

Pacman and Minesweeper Clones (JavaScript)

Both games use fast algorithms and appropriate data structures for constant lookup time
Ghost in Pacman use Dijkstra's algorithm to find shortest path to Pacman

Numerous 3D and 2D projects (Matlab)

Awarded top in class for creating a racecar simulation that had drifting, flips, burnouts, etc.
Wrote OCR software capable of identifying the letters written in a picture regardless of the font size
Developed other models to simulate wind, gravity, jet propulsion, N-body experiments

iOS Phone Development (Objective-C and Lua)

Built multi-directional shooter using the Corona SDK for 48-hour hackaton
Created a tower defense game using Objective-C

Skills

Languages (in order of experience)

c/c++, JavaScript, Python, Java, Bash, PHP, Matlab, Objective C, Lua

Sciences (in order of experience)

Algorithms, Statics, Dynamics, Graphics, Mechatronics, Thermodynamics, Fluid Mechanics,
Computer Vision, Machine Learning