(626) 475-6283 **Nathanial Hapeman** Los Angeles, CA
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Education

University of California, Riverside *Sept 2008 - Dec 2013*
Bachelor of Science, Mechanical Engineering *GPA 3.14*
Minor, Computer Science *GPA 3.63*

Professional Experience

Applied Invention, Full Stack and Geospatial Development *June 2014-Present*

Full Stack Development for computer vision project:

Wrote the entire front-end for an in-house machine learning training data generation website
Website capable of handling large amounts of data without sacrificing user experience
Worked extensively with end-users to improve the website user experience
Helped design and implement newest version of websites backend
Added flask endpoints for psql database stats, matplotlib image exporting, csv exporting
Imported training data from third party sources and fixed failed data migrations

Geospatial Game Engine Development:

Worked on an in-house c++ geospatial game engine used for simulations
Wrote entire file system diagnostics website for mapserver
Modified the mapserver and game engine to support new terrain layers and to allow dynamic switching
Built a hotkey menu system that allows users to customize and define new hotkeys
Added numerous algorithms like semi-realistic radar detection or 3D network visualization
Adding an eye tracking system to engine and implemented Kalman filter to smooth user eye data
Developed data ingestion mechanisms for real and simulated data

FrackOptima, Part-time Full Stack/ Python Developer *May 2016-October 2017*

Wrote, test, and debugged code for Fracking application built using Python and Pyside
Added small features to company website that uses AWS, Flask, CSS, jQuery, Jinja2

Personal Projects

Web Development (AngularJS, Vue.js, Sass, Flask, PostgreSQL)

Built numerous static websites using the latest web technologies
Built personal portfolio from scratch with custom JavaScript games
Working on a new portfolio website using vue.js

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 simple picture
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

Pixel Chaser (Javascript)

My fun attempt to draw pictures using DFS to choose the next pixel to draw on a blank canvas
Several image preprocessing filters help intelligently decide which pixel to draw next
Currently trying to work in edge detection for a cool effect