**Note to Employers: Please consider Portfolio work (at bottom of resume) more than work experience. Professional jobs have not been challenging, while I have done work on my own that I think demonstrates more capability.**

**Work Experience**

Methods with Class, LLC (owner)

*independent contractor, 10/2017 - present*

* Independent Contractor
* Built website for University Comedians, LLC
* Maintained educational site for evolutionary algorithms using Angular frontend and Node backend with gulp build tools
* Maintained personal blog site that is dynamically built by reading txt files in a directory
* Maintained a game platform that uses a custom-built accelerometer engine that causes mobile device motion to directly affect position of objects on screen
* Maintained a landing page/home page as part of a larger brand that is the umbrella for all projects described above

Five9 Group

*lead frontend developer, Aug 2017 – Sept 2017* (*this was a planned short-term contract*)

* Develop frontend application using Angular 4 with Typescript and Angular-CLI
* Hook up rest service calls to backend endpoints for data retrieval and display
* Worked closely with backend/server/database team to streamline the connection of rest server calls and expected response objects for proper data display
* Post-process asynchronous response from server call if necessary for optimal data display
* Development of frontend elements: tables, Bootstrap columns, tabs, etc. for data display and navigation
* Generated map views to visualize routes and heatmaps of housing data using third party plugins
  + Leaflet, Leaflet-Routing-Machine, and Leaflet.Heatmap
* Develop individual map services to handle all map functions for principled separation of concerns
* Interacted with plugins to create dynamic and engaging presentation of data
* Develop custom feedback component at top level application level to allow feedback to be displayed by any other component’s activity
* Version controlled all source code with GitLab
* Worked under the Agile development methodology

Secure Innovations, LLC

*software developer, May 2017 – Aug 2017*

* Maintained proprietary network security application sold as a customer product according to internal issue tickets, client requirements, and software improvements
* Utilized Agile methodology development environment managed by Atlassian Jira management software
* Developed application solutions with new features and bug fixes
* Developed Angular2/Angular4 frontend application with Angular CLI and TypeScript
* Interfaces with backend developers and develops for Python back-end
* Developed application that utilizes SSL Certificates, HTTPS protocols, and other security techniques
* Developed and maintains UI/UX design with HTML5/Bootstrap CSS/SASS
* Documented application setup procedures and other application information with Atlassian Confluence blog tools
* Utilized CI/CD Git version controlled deployment pipeline managed by GitLab

Dev Technology Group

*lead web developer, July 2016 - May 2017*

* Develops Frontend web applications and UI components to meet client requirements and specifications
* Builds web applications in JavaScript using Angular1, Angular2, and React modular frameworks
* Interfaces with and develops NodeJS back-end with RESTful APIs, services, and endpoints
* Practices Agile methodology development
* Implements MVC software architecture
* Builds application with Angular-CLI, Grunt, Gulp, and Webpack build packages
* Develops and maintains UI/UX design with Bootstrap css/sass
* Writes algorithms and sub-software packages as needed, using industry standard data structures
* Develops class hierarchies, inheritances, separation of concerns, and DRY
* Utilizes CI/CD Git version controlled deployment pipeline managed by AWS CodeCommit and GitLab

Methods with Class, LLC (owner)

*independent contractor, Feb 2015, July 2016*

* Independent Contractor
* Built an educational site for evolutionary algorithms using Angular frontend and Node backend with gulp build tools
* Built a personal blog site that is dynamically built by reading txt files in a directory
* Built a game platform that uses a custom-built accelerometer engine that causes mobile device motion to directly affect position of objects on screen
* Built a landing page/home page as part of a larger brand that is the umbrella for all projects described above

Cybermedia Technologies

*developer, Oct 2012 – Feb 2015*

* Developed software with JavaScript, HTML, CSS, PHP, ActionScript, and Word Macros as needed to support multiple contracts
* Developed Object-Oriented software to manage interactive elements of online course packages
* Developed class hierarchy, inheritances, separation of concerns, DRY
* Developed Word Macro that processed 150-page Word documents and eliminated dozens of man-hours of manual editing
* Designed and developed multiple class, hierarchical, and service-based software component architecture for issue tracking web service: JavaScript/HTML/CSS front-end, PHP and MySQL database back-end
* Developed ActionScript software package to support Flash quiz animation question in Online Course
* Direct algorithms, data structures, object-oriented software with less reliance on indirect assistive component frameworks
* 508 compliancy

**Skills**

* Software Development, Software Architecture, Software Engineering, Software Abstraction
* Agile methodology work environment, sprints, daily standups,
* Atlassian Jira/Confluence issue tracking and documentation tools
* Software Automation, Functional Programming, Procedural, Object Oriented Programming
* Algorithms, Search, Data Structures, Linked Lists, Data Trees
* Mobile Apps, Mobile Web, Frontend, Fullstack, Responsive Design, Single Page Web Applications
* User Experience, User Interface (UX/UI)
* Class Structures, Object Structures, Inheritance
* Requirements Definition, Requirements Gathering, Requirements Managements
* JavaScript, TypeScript, HTML, CSS, PHP, Objective-C VBA, ActionScript, JSON, REST, HTML5, CSS, SASS, Semantic CSS
* iOS and Android development
* Command line development
* AngularJS (1/2/4), NodeJS, ExpressJS, Bootstrap, MVC
* Grunt, Gulp, Webpack build tools
* Heroku application deployment, AWS virtual environment deployment, AWS Cognito authentication SDK
* Windows, Unix, Linux
* Git version control, GitHub, Bit Bucket, GitLab, AWS CodeCommit
* AWS EC2 Virtual Server Instance Deployment
* Continuous Integration/Continuous Deployment (CI/CD) pipeline workflow
* Automated deployment triggered by git version control
* Server automated build and serve scripts, remote post-receive hooks
* Linux server configuration, systemd, NGINX configuration, multiple domains
* Clean, Maintainable, Scalable, High-quality, Performance aware, unit testing based software design and development
* site hosting, domain registration, DNS configuration
* written communication and interpersonal skills
* leadership, mentorship
* Word, PowerPoint, Excel
* math, physics, engineering, motion dynamics, other technical skills

**Education**

Penn State,

2009 BS Aerospace Engineering

2011 MS Aerospace Engineering

**Portfolio**

**Genetic Algorithms Platform**

**desktop and mobile**

<https://evolve.methodswithclass.com>

GitHub: <https://github.com/methodswithclass/evolve>

**bower install evolve | npm install mc-evolve**

* Demonstrates, and educates users of, the application of genetic algorithm (GAs) and evolutionary programming (GA) to various optimization problems
* Simulates the process of evolution to optimize the solution of a given problem
* Genetic Algorithm software simulates the process of natural evolution, individuals, populations, generations, mutation, crossover
* Machine Learning processes to render artificially intelligent agent that has optimum performance
* Highly scalable, allowances for multiple sandboxed problems to be written and solved by common abstract algorithm
* Algorithm is unopinionated and abstract allowing it to be applied to any problem
* Highly computationally intensive
* Site is full-stack: AngularJS frontend, Node backend
* Computational Node application on backend that utilizes server resources, better performance
* Routing Node application on backend so that Angular app can control algorithm processing
* Site allows for real time start/stop of algorithm to test results and add more processing time if desired without having to restart from beginning
* Gulp build tools
* Deployed on AWS Cloud Virtual EC2 Linux Instance
* Automated CI/CD pipeline triggered by SSH version changes Git push to remote repository
* Bash build scripts to install dependencies, run gulp processes, and restart node server, triggered by post-receive hook
* NGINX for production and development servers on a single Instance to save cost
* Auto-restarting service for perpetual uptime

**Gravity Games Platform**

**mobile only (requires accelerometer)** <https://gravity.methodswithclass.com>

GitHub <https://github.com/methodswithclass/accelerometer>

**bower install accelerometer | npm install accelerometer**

* Software numerically integrates position of device from real-time device accelerometer data
* Multiple data filters to reduce signal noise, device noise (motion smoothing), and scale factoring to handle unit conversion.
* Produces the appearance of object on screen subject to device motion and gravity
* Boundary bouncing and dampening
* Accelerometer software is abstract, generic, and can be applied to different use cases
* Built global Manager service to handle game instances and their common objects and operations
* High scalability to allow for multiple sandboxed games to be developed
* Built with expansion in mind
* When settings to change color and size of object were desired, much of the necessary code path ways were already in place
* No refactoring, fast feature additions, quick turn-around
* Single page web, state based navigation
* Front-end JavaScript, Angular1 modular framework
* Gulp build tools to build project
* Back-end NodeJS to serve project on Heroku
* Service class based software architecture
* Leverages common data structures, and callbacks

**Unnecessary Theories (blog)**

**desktop and mobile** <https://www.unnecessarytheories.io>

* Blog site developed with JavaScript, Angular1 framework
* Algorithm developed to read in I/O text files to be interpreted by software and display HTML blog entries
* Highly scalable
* Single page web app
* Service class based software architecture
* Leverages common data structures, and callbacks
* Front-end JavaScript, Angular1 modular framework
* Gulp build toolst
* NodeJS server, served on Heroku
* Serves meta data to Facebook web crawler with Node to allow individual blog sharing
* Modular, Object Oriented, DRY, and separation of concerns
* Site is edited with PHP algorithms to conform to standard web scraping for individual URL parameters and blogs

**Open Source Code bower/npm**

* Gravity app engine
  + **bower install accelerometer**
* Evolve app engine (Genetic algorithm) (frontend or backend implementation)
  + **bower install evolve/npm install mc-evolve**
* Library of general purpose modules
  + events.service – define a callback and then fire it from another part in the app
  + react.service – simple, lightweight, no frills observable/observer pattern
  + send.service – pass objects and data around an application through a global service
  + utililty.service – a variety of common, abstract, functions that usually end up being written for every application
  + **bower install mc-shared**
* All these libraries are unopinionated native JavaScript, so they can be used in any application framework

**Methods With Class, LLC Homepage**

**desktop and mobile** <https://www.methodswithclass.com>

* Front-end JavaScript, Angular1, single-page web app
* Gulp build tools
* NodeJS server, served on Heroku
* Responsive design, mobile device recognition
* Landing page for all other portfolio projects