**Please consider my personal work listed at bottom of resume more than professional work experience. Professional jobs do not demonstrate full range of skills while I have done more complex applications on my own time that demonstrate 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 University

2009 Bachelors of Science in Aerospace Engineering

2011 Master’s of Science in Aerospace Engineering

George Mason University

2012 Graduate Certificate in Systems Engineering and Architecture Analysis

(also took courses in Java in my own time, outside of the certificate program)

**Personal Work (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