

Milpitas, CA  
1-(540)-460-6869

# MICHAEL KELLY

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mkellydevv.github.io

## EMPLOYMENT

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<b>Full-Stack Developer</b>	<b>Contract</b>	<b>Oct 2018 - Present</b>
<i>JavaScript, MongoDB, Express, React, Redux, Node, jsPsych, Bootstrap</i>		
<ul style="list-style-type: none"><li>Developed a full-stack web application for a doctoral student's dissertation study on the prediction of suicide.</li><li>Used Mongoose and MongoDB to store participant data for the 8 week duration of the study.</li></ul>		

## EDUCATION

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<b>Fairfax, VA</b>	<b>George Mason University</b>	<b>Aug 2008 – May 2015</b>
<ul style="list-style-type: none"><li>Completed 106 credits towards a BS in Computer Science</li><li>Coursework Highlights: Data Structures, Analysis of Algorithms, Database Concepts, Visual Computing, Data Mining, Formal Methods &amp; Models, Numerical Methods in Engineering, Software Reqs. &amp; Design Modeling</li></ul>		

## SOFTWARE PROJECTS

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<b>Online Platform Game</b>	<b>Jan 2019 - Present</b>
<i>JavaScript, Node JS, Pixi JS, Express, Heroku, Git</i>	
<ul style="list-style-type: none"><li>Developed a 2D platform game and engine using object composition techniques playable via a web browser.</li><li>Implemented engine features such as: Trigger/Condition/Action System, Finite State Machine AI, and various Broad/Narrow phase collision culling and detection techniques.</li><li>Incorporated the Pixi JS rendering library to create a camera capable object tracking and parallax layers and an asset loader to load level data from JSONs.</li></ul>	

<b>Online Tile Map Editor</b>	<b>May 2018 - Aug 2018</b>
<i>JavaScript, Node JS, Pixi JS, Express, Bootstrap, jQuery, Heroku</i>	
<ul style="list-style-type: none"><li>Designed a tile map editor that game developers can use to create 2D tile based levels accessible via browser.</li><li>Utilized an auto-tile algorithm that determines the shape of fill tiles and the border masks/overlays required.</li><li>Implemented layer scaling, offsetting, and parallax directly into the editor to decrease level development time.</li></ul>	

<b>Vector Graphics Animator</b>	<b>June 2016 - July 2016</b>
<i>C++, FLTK, OpenGL Visual Studio, Git</i>	
<ul style="list-style-type: none"><li>Created a program where users can create animations using vector graphics and frame tweening.</li><li>Implemented a scene graph data structure which is a node tree where each node holds a vector polygon and pointers to its sub-nodes; transformations are applied to a node and all its sub-nodes.</li><li>Designed so that any frame where a transformation occurs becomes a key frame and intermediate frames are linearly interpolated during playback.</li></ul>	

<b>Subdivision Surface Modeler</b>	<b>June 2016 - July 2016</b>
<i>C++, FLTK, OpenGL, Visual Studio, Git</i>	
<ul style="list-style-type: none"><li>Built a program that refines polygonal meshes using a derivation of the Catmull-Clark subdivision technique as it applies to quadrilateral faces.</li><li>Implemented a random height field generator and prefabricated polyhedral objects to test the algorithm.</li></ul>	

## LANGUAGES AND TECHNOLOGIES

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- Languages: *(Proficient)* JavaScript, C++, HTML/CSS; *(Familiar)* C#, Python, Java
  - Technologies: *(Proficient)* Visual Studio, Git; *(Familiar)* Unity, OpenGL, SSH, UML, Matlab, WEKA
  - Web Technologies: *(Proficient)* jQuery, Bootstrap, MongoDB, Express, Node JS, Socket.io, Pixi JS; *(Familiar)* React, Redux, MySQL