Garrett J. Tongue

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<https://gtongue.github.io/PersonalSite/index.html>

<https://github.com/gtongue>

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Skills

**Fullstack Software Engineer with experience in JavaScript, Ruby, Rails, React.js, Redux, jQuery, SQL, HTML, CSS, Git, MATLAB, Java, C++, C#, OpenGL**

Projects

**Programming 200**

[**http://www.programming200.com**](http://www.programming200.com)

[**https://github.com/gtongue/Programming101**](https://github.com/gtongue/Programming101)

*A full stack application to teach beginners programming with a backend in rails and a frontend in react / redux.*

- Programmed backend web API for user authentication and saving programming challenges

- Designed database schema to allow for efficient data access using SQL.

- Engineered a system to run user inputed javascript safely on their browsers javascript engine using code injection.

**WebGL Water Simulation**[**https://gtongue.github.io/WebGLWater/**](https://gtongue.github.io/WebGLWater/)

[**https://github.com/gtongue/WebGLWater**](https://github.com/gtongue/WebGLWater)

*An interactive water simulation using vanilla javascript, webGL, and glsl.*

- Developed simulation that renders waves in 3D using modern webGL standards.

- Use the gerstner wave function to allow users to change amplitude, color, speed, and direction. Calculations are done on the GPU for fast execution

**Blob Darwinism**

[**https://couteaufourchette.github.io/blobdarwinism/**](https://couteaufourchette.github.io/blobdarwinism/)

[**https://github.com/CouteauFourchette/blobdarwinism**](https://github.com/CouteauFourchette/blobdarwinism)

*A simulation of an ecosystem of blobs that learn over generations*

- Wrote a rendering engine within WebGL for fast rendering

- Engineered a neural network using vanilla JavaScript

- IN-PROGRESS (System to save out simulations and load at later times)

**Electronics TA / Presentation at Rochester Academy of Science**

*Provide assistance for the physics course Electronics and present about the course at RAS.*

- In charge of classroom activities making sure students understand the new concepts

**CS Assisted Trading**

[**https://github.com/gtongue/StockTool**](https://github.com/gtongue/StockTool)

*Wrote software to assist in market research and develop trading strategies.*

- Managed brokerage account and actively traded options with investment partners

- Programmed in java to compile stock data from all over the web

- Developed trading algorithms in Tradestation’s EPL

- Presented findings at Hobart and William Smith Senior Symposium

**Game Engine Development**

[**https://github.com/gtongue/DXGameEngine**](https://github.com/gtongue/DXGameEngine)

*DirectX 12 Engine written within C++*

- Features: Lighting, Texturing, Loading models (obj or fbx), 2D physics, 3D collisions.

**Observational Astronomy Tool**

*Software written java which is used by intro level astronomy students to visualize a star’s position based on location, RA, DEC, and date.*

EXPERIENCE

**Junior Engineer Intern**

*City State Entertainment, Fairfax, VA Summer ‘15, Summer ‘16*

- Receive tasks from senior engineers that used C++, C#, typescript, html.

- Example tasks: (Dashboard for TVs, debugging, tools for 3D building system…)

**Web Development Intern**

*Lerentech Solutions, Syracuse, NY June 2014 - August 2014*

- In charge of creating/updating clients websites.

- Responsible for responding to clients requests.

**Counselor**

*Camp Good Days and Special Times, Branchport, NY June 2012-July 2012*

- Provided 24 hour care for children who have either had cancer or lost a family member to cancer.

EDUCATION

**Hobart College,** Spring 2017 - BS in Computer Science and Physics

**App Academy, 2017** - Software engineering curriculum with an emphasis on full-stack development, algorithms, and data structures