Bryce Summers

Idiosyncratic Design Portfolio

brycesummers.com | bs3363@nyu.edu | Brooklyn, NY
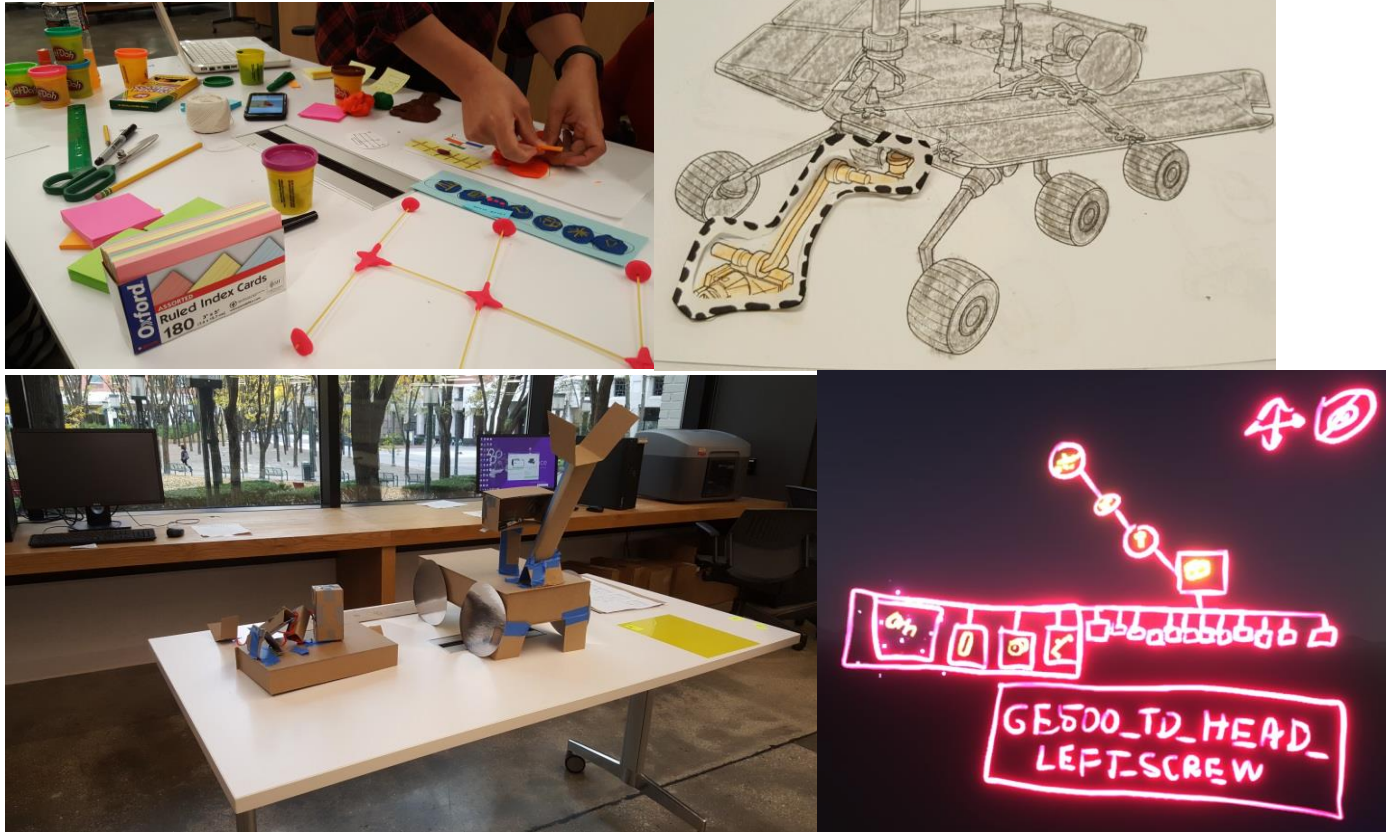
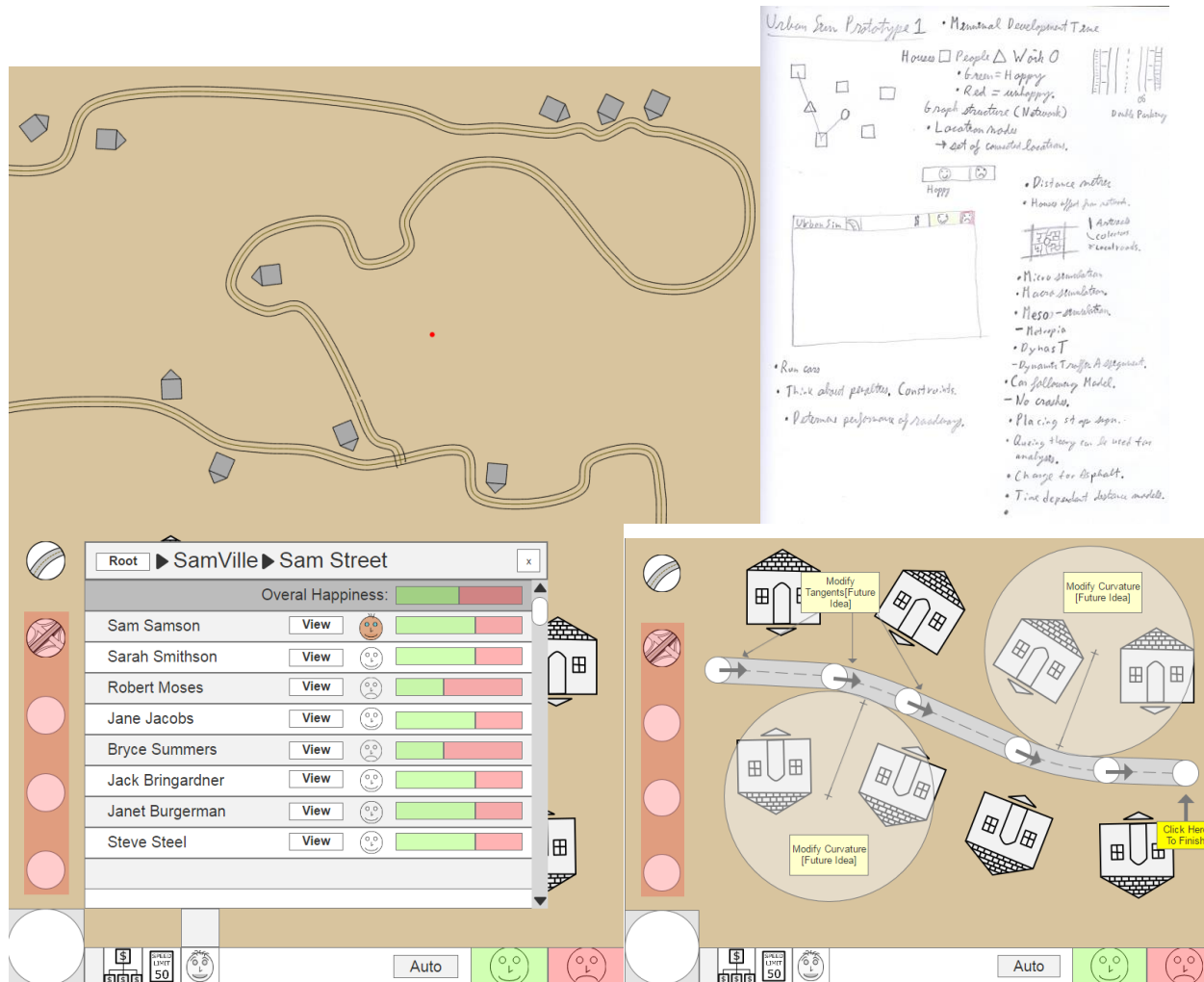$$\mathcal{O}(n^2) \to \mathcal{O}(n \log n) \to$$

Work in progress!!

Dear Reader, This portfolio is a work in progress. I haven't gone about making proper images and putting this documentation together in a meaningful way yet, since that will take longer than the time I have left.
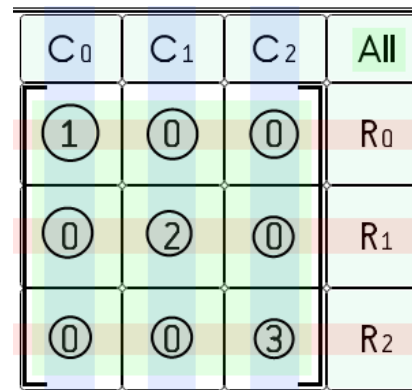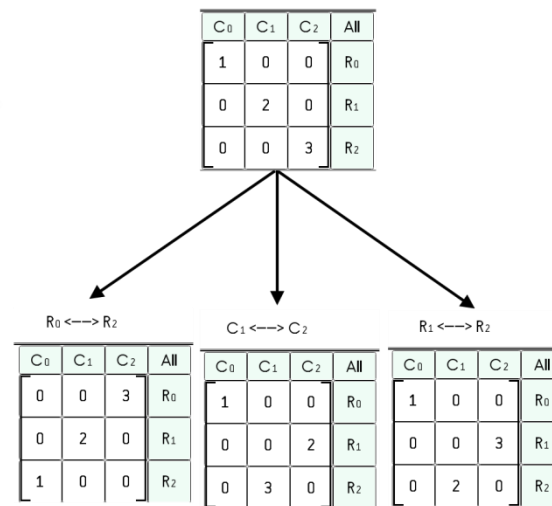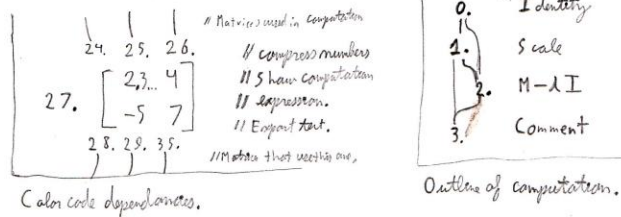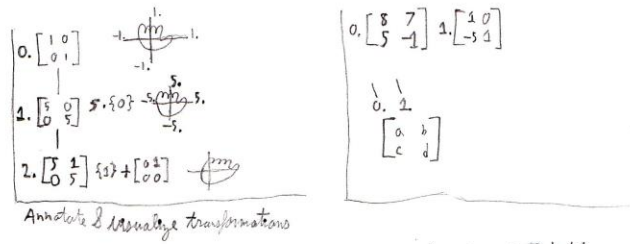
NASA JPL

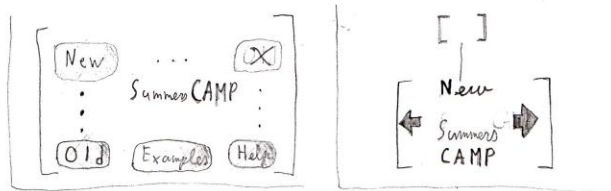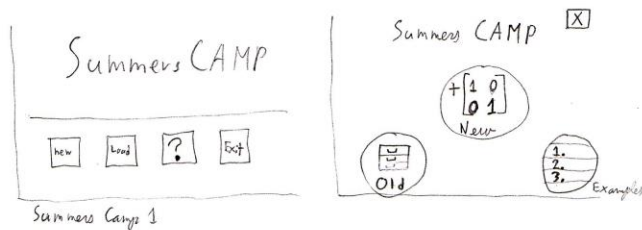We prototyped user interactions for navigating a hierarchy using the holo lens for the NASA JPL Ops lab.

SimUrban

This is a game about designing infrastructure networks.

Summers CAMP

Summers CAMP was funded by a Summer Undergraduate Research Fellowship back in 2013.
I am continuing to work on it with further design iterations.
http://bryce-summers.github.io/Project_Pages/SummersCAMP.html

Crane Diagram Automation
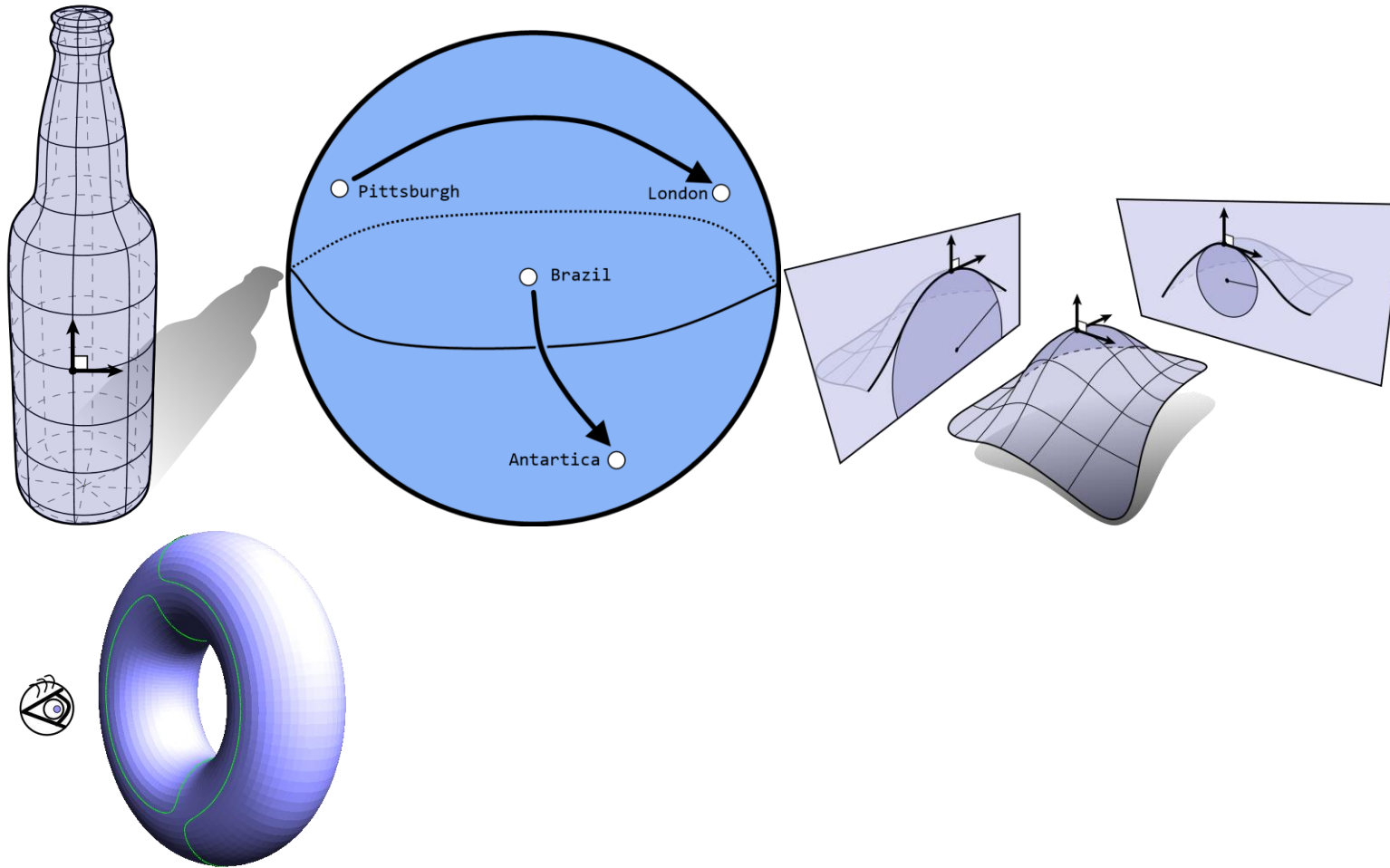
Automating the Generation of beautifully Illustrated 3D Geometry.

https://bryce-summers.github.io/Design_Portfolio/pages/CraneDiagrams/Extracting_Curves_From_Subdivision_Surfaces.pdf

Scribble Segmentation
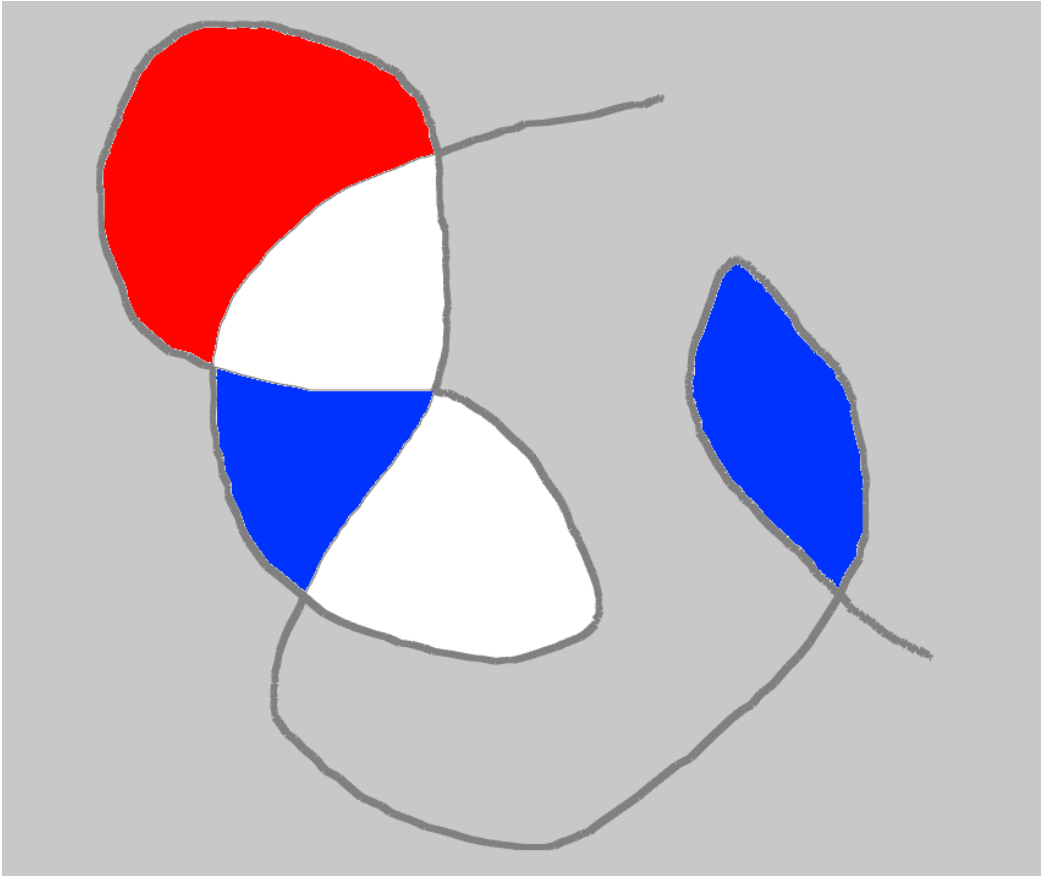
Algorithm that finds all of the faces demarcated by a planar curve. (FIXME: This picture is really ugly.)

https://github.com/Bryce-Summers/ofxScribbleSegmenter

Domino Traveling Salesman Problem
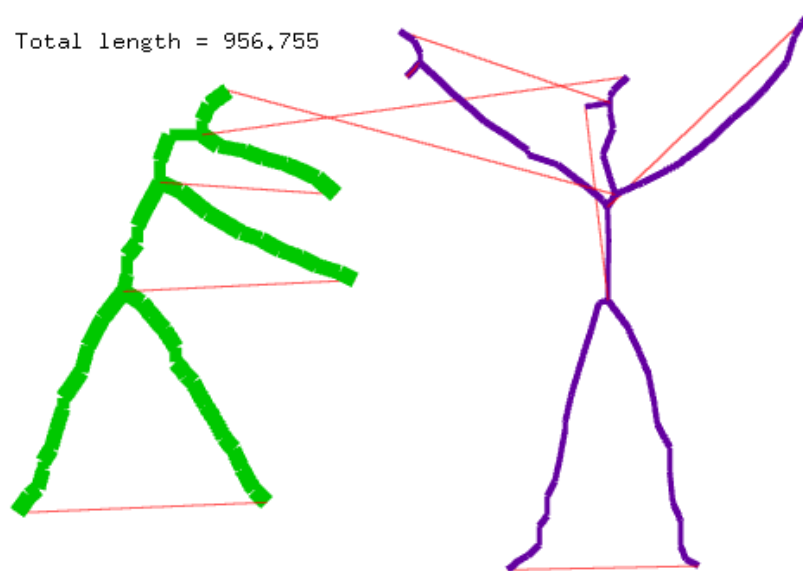
Solves the traveling salesman problem for a group of dominoes.

https://github.com/Bryce-Summers/ofxLaserTSP

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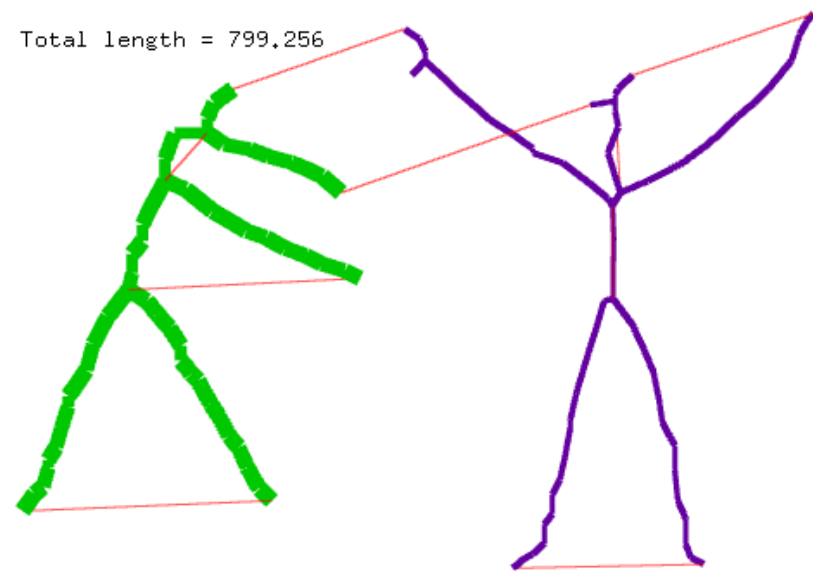
Languages & Frameworks
C++ | WebGL | JavaScript | etc
Open Frameworks | Processing
Three.js

Algorithm Design
Geometry | Graph Theory
Rendering
Computer Algebra
Compilers
Languages

Game Design
Board Games
Digital Games

User Experience Design
User Testing
Comparative Analysis
Mindmap
Sketching
Axure

Professional Tools
Git
Linux
Trello

Fine Arts
Photography
Bassoon | Singing
Composition
Drawing

Experience

Bryce Summers Consulting, Brooklyn, NY
Principle | Summer 2016 – Present
- Designing a compiler for the Escher Animation programming language.
- Domino Traveling Salesman Problem for guiding a laser beam.
- Merging halfedge faces for scribble segmentation digital game.

Autodesk, San Francisco, CA
Tinkercad Developer Intern | Summer 2016
- Screen Space Constructive Solid Geometry Algorithm, saving up to $30,000 each month.

Studio for Creative Inquiry, Carnegie Mellon University (CMU), Pittsburgh, PA
Research Assistant | Summer 2014 – May 2016
- Planar scribble to halfedge mesh algorithm.
- Boundary Subdivision Scheme called ofxButterfly for Augment Hand Series art project.
- Reduction from ofxPuppet to LAPACK linear algebra solver.

Introduction to Computer Graphics Course (15-462), CMU, Pittsburgh, PA
Teaching Assistant | Summer 2014 – May 2016
- Developed 2 / 5 assignments with Keenan Crane on Geometry and Animation.
- Held weekly office hours, 2 review sessions, and private meetings with students.
- Contributed two final project options on Iterated Function Systems and 2D ray tracing.

Undergraduate Research Office, Carnegie Mellon University, Pittsburgh, PA
Summer Undergraduate Research Fellowship | Summer 2013
- Invented the Summers Computer Aided Mathematic Program (CAMP). Iterative Design,
  user testing, literature review, custom made visual rendering, data structures, and algorithms.

Education

MS Integrated Digital Media, New York University (Graduating in Spring 2018)

BS (with honors) Computer Science, Carnegie Mellon University (3.69 gpa, May 2016)