

Alexandra J. Marx

Email: ajjmarx@umich.edu
734-730-4398

Ann Arbor, MI, USA (Willing to relocate)
LinkedIn: [linkedin.com/in/alexandra-marx-85622a242](https://www.linkedin.com/in/alexandra-marx-85622a242)
GitHub: github.com/AjjMarx
Blog and Portfolio: ajjmarx.github.io/

Education:

University of Michigan, Ann Arbor, MI (Jan. 2025 - Dec. 2027 Expected)

- BS Computer Science
- BS Mathematics: Mathematical Sciences (Biology)
- Fall 2025 GPA: 3.5, Cumulative GPA: 2.8

Washtenaw Community College (Sept. 2022 - Dec. 2024 Transfer)

- GPA: 3.7, Dean's list (2024)

Experience:

Software Eng. Research: Undergraduate Research Opportunity Program (Sept. 2025 - Present):

- *Reinventing Programming in Social Studies, Mathematics, and Language Arts Classes*
 - Principal Investigator: Prof. Mark Guzdial, Director of COMPFOR at Michigan
 - Role: Developing a **Graph Theory Educational Programming Language** for use in schools.
 - > Engineered native JavaScript code to generate and execute drag-and-drop SVG programming blocks.
 - > Developed WebGL graphics pipeline and equations to render interactive 3D textured globe.
 - > Documented research process for locating entry points for lessons and ideal pedagogy in design.
- Code: github.com/AjjMarx/TeaspoonGraph, interactive Demo: ajjmarx.github.io/TeaspoonGraph/

Course Research: Lab of Geometry at Michigan (LoG(M), MATH 440) (Jan. 2026 - Present):

- *Exploring Domains of Discontinuity in \mathbb{R}^3*
- Faculty Advisors: Alejandro Bravo-Doddoli, Neza Zager Korenjak
- Team-based computational mathematics research into dynamics of 3D linear transformations.

Volunteer: Girls in Electrical Engineering and Computer Science (Sept. 2025 - Present)

- Collaboratively designed and taught a lesson in introductory computer science to several groups of 40-50, mostly female, elementary and middle school students.

Volunteer: Math Corps Tutoring (University of Michigan) (Nov. 2025 - Present)

- Weekly mathematics tutoring for middle school students at Ypsilanti Community Middle School.

Employment: Food Service (Multiple Roles) (2022, 2024 - 2025)

- Prepared food in a high stress, hierarchical, and diverse environments. Maintained a clean kitchen.

Additional Projects:

Personal Site/Tech Blog (Sept. 2025 - Present)

- Single page application (SPA) written in HTML5, JavaScript, and CSS.
- Engineered animated webpage transitions between any two pages while preserving URLs.
- Developed abstraction layer to define safe, aesthetically pleasing, webpages with JSON.

Code Repository: github.com/AjjMarx/ajjmarx.github.io

3Blue1Brown Summer of Math Exposition #2: Math Explainer Competition (SoME2):

- Wrote, voiced, and animated 25-minute 3D animated video in Blender explaining intuitive geometric principles behind Voronoi Diagrams and Fortune's Algorithm.
- Programmed automated processes for rendering complex concepts with then-new Geometry Nodes.
- Achieved >11,000 Views and over 600 likes, YouTube: https://youtu.be/L_joQb12QSE

3-Dimensional Polyhedral & Developable Surface Paper Art (Published):

- Designed and translated numerous complex, artistic, 3D models into respective flat 2D un-foldings to fit within hardware constraints and be easily re-folded into original designs.
- Seen by over 240,000 users, generated over \$11,000 in ad revenue.

Skills:

Programming:	C++ JavaScript Lua Python HTML/CSS WebGL GLSL Unix Command Line
Computer Science:	Algorithms Data structures Graphics Unit & Integration testing
Applied Math:	Linear Algebra Differential Equations Discrete Math Numerical methods
Pure Math:	Real analysis Abstract Algebra Dynamics & Recursion Mathematical Origami
Human Language:	Mandarin Chinese (Simplified) (HSK 4 equivalent) (B1, Basic Fluency)
Dev. Software:	GitHub Bash Zsh Vim Valgrind Secure Shell (SSH) \LaTeX (LaTeX)
Other Software:	Blender Fusion 360 ArcGIS Adobe Suite Office Suite Google Suite
Digital Design:	Vector Graphics Shaders Tikz 3D Paper Crafts 3D Printing Pixel Art