

Skills

Languages	HTML, CSS, Javascript/TypeScript, Node, SQL, PHP, XML/XSLT, LDAP	Libraries	React, THREE.js, CodeMirror, KaTeX, MathJax, Desmos calculator, OpenLayers
APIs	AWS, GCP, GitHub, Airtable, Facebook, Word-Press	Basic knowledge	Python, Ruby, FFmpeg

Education

- 2014–2019 **Ph.D. in Mathematics**, *University of Texas at Austin*, Austin, TX.
2008–2013 **B.Sc. in Honors Mathematics**, *University of Alberta*, Edmonton, AB.

Employment

- 2019–2022 **Tamarkin Assistant Professor of Mathematics**, *Brown University*, Providence, RI.
2016–2019 **Graduate Research Assistant**, *University of Texas at Austin*, Austin, TX.
2014–2016 **Graduate Teaching Assistant**, *University of Texas at Austin*, Austin, TX.
2013–2014 **MOOC software consultant**, *University of Alberta*, Edmonton, AB. (XSLT, Node, SQL, Javascript).
 - migrated eMath textbook software from Apache Cocoon to Node/SQL backend
 - fixed bugs in existing frontend code and added several new modern interactive features

2010–2012 **Freelance Developer**, *ElectionBuddy*, Edmonton, AB. (Ruby on Rails, Facebook).
 - added feature to run elections through Facebook
 - updated user checkout flow

Projects

- 2017–present **Liquid**, <https://liquidjs.org>. (TypeScript, all Libraries listed above except OpenLayers, FFmpeg). Built framework for creating interactive videos in React.
 - plugins for audio/video recording; cursor and handwriting recording; captioning; and a 3d graphing calculator
 - integrations with CodeMirror, KaTeX/MathJax/XyJax, and Desmos
 - wrote documentation and produced tutorials
 - produced ≈130 educational videos with the software, see [MATH 180](#) and [Epiplexis](#)

2019–2022 🚗 (Canvassing app). (Node, SQL, React/Redux, OpenLayers, GCP, Airtable).
 - built turf-cutting/mobile canvassing app for door-knocking campaigns in Rhode Island
 - wrote scripts to geocode addresses from state voter file
 - added ability to export data to Airtable and Google Sheets

2011–2013 **Director of Web Design**, *ISSS*. (WordPress, SQL, PHP).
Volunteered with Interdepartmental Science Students' Society at the University of Alberta.
 - built course-rating service for Science students (implemented as WordPress plugin)
 - launched new WordPress site

2009–2013 **Bearbook**. (Javascript, PHP, SQL, Facebook, LDAP).
Built Facebook app for University of Alberta students; had over 9000 active users at our peak.
 - initial functionality was to share timetables and find spares with one's friends
 - added price comparison for textbooks and later built textbook marketplace
 - scraped University course directory and LDAP backend for course data; scraped OpenLibrary for textbook data
 - built Course Directory that was much faster and easier-to-use than the University's, as well as a Schedule Builder
 - worked with the University to create APIs making it easier for future students to develop similar innovations

Teaching

- 2021 **Interactive videos for teaching and visualization**, *PCMI Illustrating Mathematics week*.
Ran a workshop on Liquid as part of the PCMI's [Graduate Summer School week on Illustrating Mathematics](#).
- 2021 **Coding for organizers**. (TypeScript, GitHub API, AWS).
 - organized and taught a code school teaching the basics of data management and web scraping
 - set up Markdown static site to automatically deploy from GitHub
 - built interface to record interactive Python and JavaScript tutorials to AWS

2019 **Javascript Working Group**, *PCMI Illustrating Mathematics semester*, Providence, RI.
Taught participants Javascript, in particular THREE.js, in order to create interactive math visualizations.