

## 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

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.