

# Eugene Brodsky

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## >> Education

University of California, Berkeley

2017-2021

**Degree:** BS in Applied Mathematics

**Math Coursework:** Discrete Math, Linear Algebra, Abstract Algebra, Real Analysis, Complex Analysis

**CS Coursework:** Structure of Programs, Data Structures, Algorithms, Security, Numerical Analysis, Social Justice in CS

**Associations:** Mu Alpha Theta, Cal Tennis

## >> Personal Projects

**Personal Website:** <https://eugenebrodsky.me>

### Horse

**Social/Competition iOS app. Connects users via proximity and facilitates games of “horse”.**

- Used CoreLocation to update location to the backend, which returns nearby users. Used MapKit to display nearby users.
- Developed a RESTful API using Express on backend and Alamofire on client.
- Integrated JWT for session tokens allowing for authentication on protected routes. Supports client-side token storage.
- Server uses a normalized database schema on MySQL to effectively store and lookup data. Wrote SQL procedures to optimize database usage.
- Created bash scripts to support the development environment.

Software: Node, JavaScript, Swift, MySQL, Express, JSON, Bash, Alamofire, Xcode

### cScraper

**A Craigslist scraping tool which alerts a user about new posts.**

- Used BS4 to parse HTML for new Craigslist posts, used smtplib for sending emails to users.
- Implemented new thread creation to allow for continued scraping while also listening for new requests.
- Created an API adhering to REST principles.

Software: Python, Flask, JSON, React, Axios, Docker, Firebase

### SkaDice

**A random skateboard trick generating app written in Swift for iOS.**

- Enforced a constrained UI layout for a consistent look across all devices.
- Developed an interactive GUI– a rotating menu option selector which serves to create a unique user experience.

Software: Swift, Xcode

## >> Coursework Projects

### RaceRunner

**2D tile-based game in Java.**

- Designed a pseudo-random world generation algorithm, Locates the “largest” target for a structure.
- Supported game persistence by saving keypress data to file for future loading.
- Other features – race mode, game architecture, and graphic design.

### File Sharing Client

**An interface for an end-to-end encrypted file sharing system.**

- Created a data structure to solve the enforcement of file ownership and privileges.

### PintOS

**Worked with a team of 4 to implement solutions for a skeletonized LinuxOS.**

- Implemented multithreading, shell creation, syscalls for x86 architecture.

## >> Leadership

### Mu Alpha Theta • President

Hosted club meetings and promoted math club events. Corresponded with guest speakers to secure lectures. Developed incentives with instructors to boost math club turnout.

## >> Skills

proficient

familiar

Python, SQL, Git, GitHub, data structures, algorithms

Swift, JavaScript, Java, Go, HTML/CSS, Unix, Matlab