

# Michael Pavkovic

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## Education

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<b>Amherst, MA</b>	<b>University of Massachusetts, Amherst</b>	<b>Fall 2018 – May 2022 (Expected)</b>
<ul style="list-style-type: none"><li>B.S. in Computer Science, College of Information and Computer Sciences; Cumulative GPA: 3.96<ul style="list-style-type: none"><li>Courses: Programming Principles, Data Structures and Algorithms, Reasoning Under Uncertainty, Computer Systems Principles, Linear Algebra, Calculus II, Calculus III</li></ul></li></ul>		

## Work Experience

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<b>Software Engineer Intern</b>	<b>TripAdvisor</b>	<b>Summer 2019 (12 weeks)</b>
<u>TripAdvisor Vacation Rentals, Web and Backend Development</u>		

- Developed responsive React frontend components and Java/GraphQL backend for our new Broad Geo Page, predicted to boost user engagement and lower bounce rate by 75% compared to old, static page
- Reimplemented major React components using modern functional style and React hooks, reducing technical debt
- Rebuilt mobile "Property Card" with photo carousel to highlight vacation rental photos on the mobile search page, increasing bookings and increasing time spent on our site by 10%
- Created a Postgres read-only store and populator job for filtering and accessing highly popular vacation rentals instantly

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<b>iOS Developer</b>	<b>UMass Amherst College of Education</b>	<b>Fall 2018 – Present</b>
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### Project RAISE – Interactive Textbook iPad App

- Audited app for SQL injection vulnerabilities, improving security and enforcing proper use of the database API
- Polished key user interactive components, allowing for an easier learning experience for students who use the app
- Re-implemented the image creator from the ground up using my MetalLines project, boosting student engagement

### HARTS – iPad App for Opioid Epidemic Counselling, Recovery, and Reporting

- Implemented REST API interaction framework, allowing for clean, reusable networking code, saving on development time
- Developed JSON caching system for offline use of the app so case workers could help clients outside of Wi-Fi coverage
- Enforced accessibility guidelines in development, enabling app to be used by anyone with vision or hearing impairment

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<b>Web Developer</b>	<b>Persomics, Inc</b>	<b>Summer 2018 – Fall 2018</b>
<u>Corporate Website</u>		

- Implemented company blog ([Persomics.com/blog](http://Persomics.com/blog)) using Jekyll Collections, and added integration with a content management system for easy future writing and edits (Netlify CMS)
- Wrote a custom Jekyll plugin in Ruby to index blog post topics, generate topic index pages, and find related posts; made navigating to similar articles easier and quicker
- Cleaned up pages to load faster, and use less memory by removing unnecessary JavaScript from previous generated HTML: Load times and data usage reduced by 50%

## Project Experience

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<b>MetalLines (2019)</b>
<ul style="list-style-type: none"><li>Developed an iOS/macOS/tvOS computer graphics framework written in Swift and Metal (Apple graphics language)</li><li>Created ability for developers to draw lines and curves on a canvas at 60 frames per second</li><li>Leverages Metal for GPU hardware accelerated matrix rendering on supported Apple devices, for smooth, lag-free drawing</li><li>Added Apple Pencil support and pressure sensitivity to provide a professional-level drawing experience</li></ul>
<b>KunaCalc (2018)</b>
<ul style="list-style-type: none"><li>Designed iOS calculator app written in Swift that features a computer algebra system capable of solving algebra and calculus problems</li><li>Added accessibility features including number readout, left hand mode, color blindness themes, and dictation</li><li>Made it fully end-user programmable for infinite customization and use cases</li></ul>

## Awards

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- TripAdvisor Intern Hackathon Semifinalist:** Placed semifinals for developing a virtual reality experience with my team, where users can see TripAdvisor reviews placed on top of businesses' buildings in a street-side view using Google Maps
  - Third Place, St. Anselm Programming Contest:** Awarded 3<sup>rd</sup> place prize for completing the algorithms contest with high program validity
  - Senior Computer Science Award:** Awarded Computer Science award for dedication to Computer Science in and out of the classroom, Senior year of high school

## Languages and Technologies

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- Swift, Java, React, JSX, GraphQL, JavaScript/HTML/CSS/Less, Metal, Kotlin, TypeScript, C, Ruby (Jekyll), Bash
  - macOS, Linux, IntelliJ, Xcode, VSCode, Gradle, Fish Shell, Git Version Control, SQLite, PostgreSQL, CI/CD