

MAPC Summer Fellowship 2023

Designing Digital Tools And Websites At MAPC

Coding it Forward Fellow
▶ Andrew Liu



coding it forward >



► Introduction

As you all probably know, i'm Andrew Liu! I'm currently completing my Computer Science Masters at NYU. On top of Computer Science, I have a background in Game Development and Illustration

This summer i've been working closely with Jon and Stephen as part of the digital services team doing full-stack development work as a Coding it Forward fellow.

A little about the projects that I've worked on during my 8 weeks here so far and a general overview of the experience!

▶ Projects

- ▶ Trailmap v4.0
- ▶ MakingSpace
- ▶ Perfect Fit Parking
- ▶ Muni Emoji
- ▶ Rental Listings DB

► Trailmap v4.0

- Responsive Design
- Accessibility Design
- Content Fixes
- User Flow redesign
- Added data labeling, selection, and suggestion features
- Multi-layer Airtable Base architecture for serverless secure public data entry

<https://airtable.com/appFFbDHezFYAfrbN/shrRzP9rWh8E6g6DM>

<https://staging.trailmap.mapc.org/>

<https://trailmap.mapc.org/>

Trailmap: Metro Boston's Regional Walking and Cycling Map

Find the trails that work for you!

Select from various trail types to find trails best suited to your needs. Find a description of each to the trail types [here](#).

Click an existing or proposed trail on the map for more information.

Existing:

- Paved Shared Use
- Unimproved Shared Use
- Bike Lanes
- Protected Bike Lanes
- Paved Foot Path
- Natural Surface Path

Planned:

- Planned Paved Shared Use
- Planned Unimproved Shared Use

Suggest Trail Record Edit

Submit a form to suggest an *Addition or Edit* Data for:
Trail ID: 38981

Trail Name:
Atlantic Avenue

Layer Type:
Bike Lanes

Trail Steward:

Opening Date:
2011

Submit

Share the Map

Click below to copy the map URL to share.
<https://staging.trailmap.mapc.org/>

To download the CSV and Shapefiles for these trails, visit [MAPC's DataCommon](#)

Direct Downloads

Trail Type	CSV	Shapefile
Walking Trails (Lines)	.csv	.shp
Bicycle Facilities (Lines)	.csv	.shp
Land Line Systems (Lines)	.csv	.shp
Shared Use Trails (Lines)	.csv	.shp

Trailmaps is always looking for new and improved data from the community. We encourage everyone to submit up-to-date information on individual trails so we can continue to improve this dataset. Learn more about trailmaps and continuing [here](#).

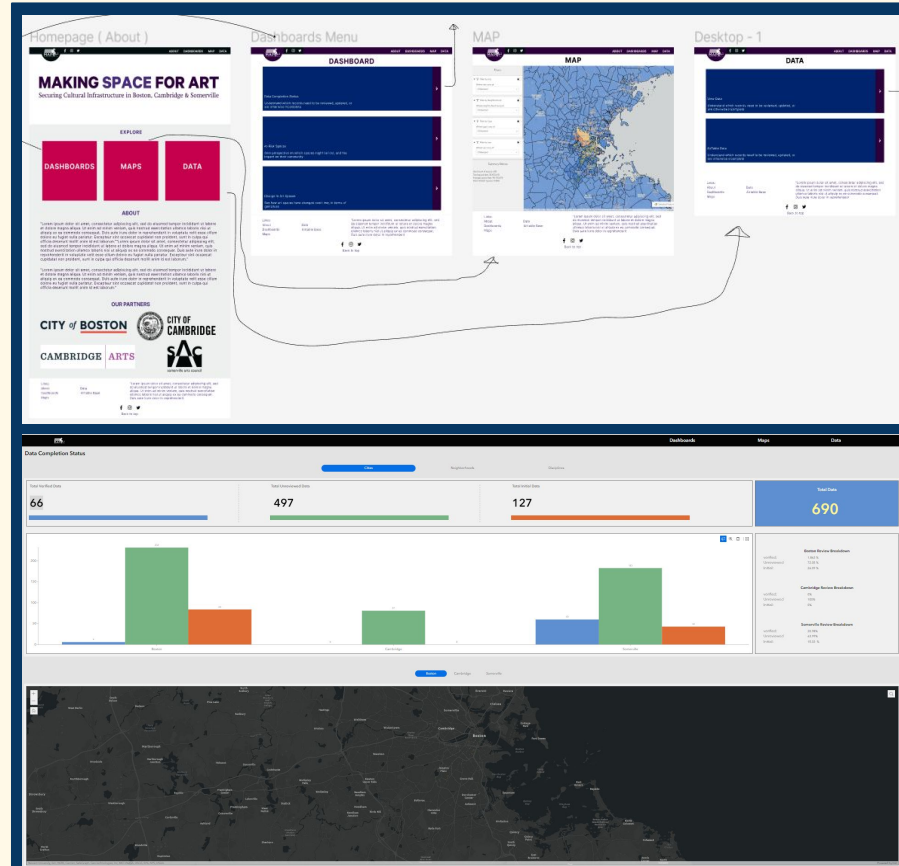
Glossary of Trail Types

The following is a brief description on the different trail types found in the control panel. Proposed trails (dashed lines) of each type represents future trails:

- Paved Shared Use:** Hard packed accessible surface, typically asphalt or stonedust
- Unimproved Shared Use:** Future paved paths, currently with an unimproved natural surface
- Bike Lane:** Striped lane within the roadway adjacent to traffic
- Protected Bike Lane:** Physically separated from motor vehicle traffic
- Paved Foot Path:** Hard surface path, typically in city park or campus environments
- Natural Surface Path:** Hiking trail, typically found in conservation areas

► MakingSpace

- Esri Experience Builder, built a dashboard for the MakingSpace web prototype
- Made UI/UX design mockup for MakingSpace using Figma
- Repurpose data enriching script (credits: Jon) to alter data and work around Experience Builder Data Visualization limitations



► Perfect Fit Parking

- Styling, Accessibility Design updates
- Refactor website's D3.js visualization
- Added features to improve differentiating phase data; Added new data; Viz bug fixes; phase filtering
- Collaborated with other teams to update data on datacommon, get viz data confirmed, content updates and reviews

<https://perfectfitparking.mapc.org/>

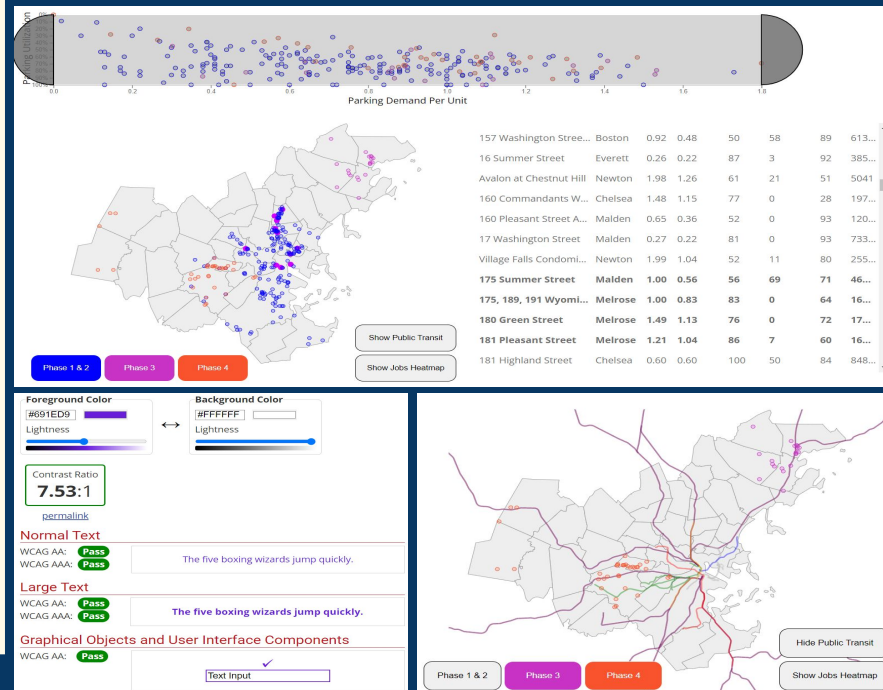
July 2023: Phase 4 Update

MAPC has expanded our Perfect Fit Parking research to include municipalities west of Boston, adding another contribution to an increasingly robust dataset that highlights how most communities have built more residential off-street parking than is needed or utilized.

Click the buttons below to view the press release and memorandum for our most recent Phase 4 parking utilization study. The website sections that follow further detail MAPC's findings from previous phases of Perfect Fit Parking research.

[Press Release](#)

[Study Memorandum](#)



► Muni Emoji 🏰🏰🏰

- Started a creative coding project for internal community engagement and discussion over a fun light-hearted topic of international emoji day!
- Introduce creative coding/game development concepts such as 'Juice'!
- Serverless architecture, single static React site with an Airtable base to store data
- Reactive and Accessible design!
- Published to the public! With an audience ranging from MAPC to Legislators!



<https://airtable.com/app7invLG3BPCqc6o/shrOfU8zyqpWmiB2e/tbltaZ0zK1spJ8rxr>
<https://mapc.github.io/EmojiKotH/>

MUNI EMOJI

INSTRUCTIONS

- ✓ See MAPC Munis' Emojis!
- ✓ Select Your Muni
- ✓ Make your Emoji the King of the Month!

MUNICIPALITY
BOSTON

Municipality	Emoji	Explanation
Wayland	📖	First town to use taxes for a free public library
Sherborn	🎒	Good school system
Somerville	🍺	Clinking Beer Mugs
Topsfield	🍓	Annual strawberry festival
Uxbridge	🍷	shot heard round the world
Malden	🥩	Malden is home to Dom's Sausage - the originators of Steak Tips!
Hull	🥩	Malden is home to Dom's Sausage - the originators of Steak Tips!
Malden	🥩	Malden is home to Dom's Sausage - the originators of Steak Tips!
Saugus	🏭	Saugus Iron Works (National Historic Site) was the first integrated ironworks in America
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Holliston	👤	Produced boots for soldiers during Civil War
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Watertown	🏰	Bridging Cultures
Milford	🏰	Milford is renowned for its Milford pink granite, and the quarries there that powered the city
Braintree	🌳	Brain tree
Westwood	🌳	Brain tree
Reading	🚀	Go Rockets!

BOSTON'S EMOJI

close emoji picker

Search

Frequently Used

Smileys & People

What's Your Mood?

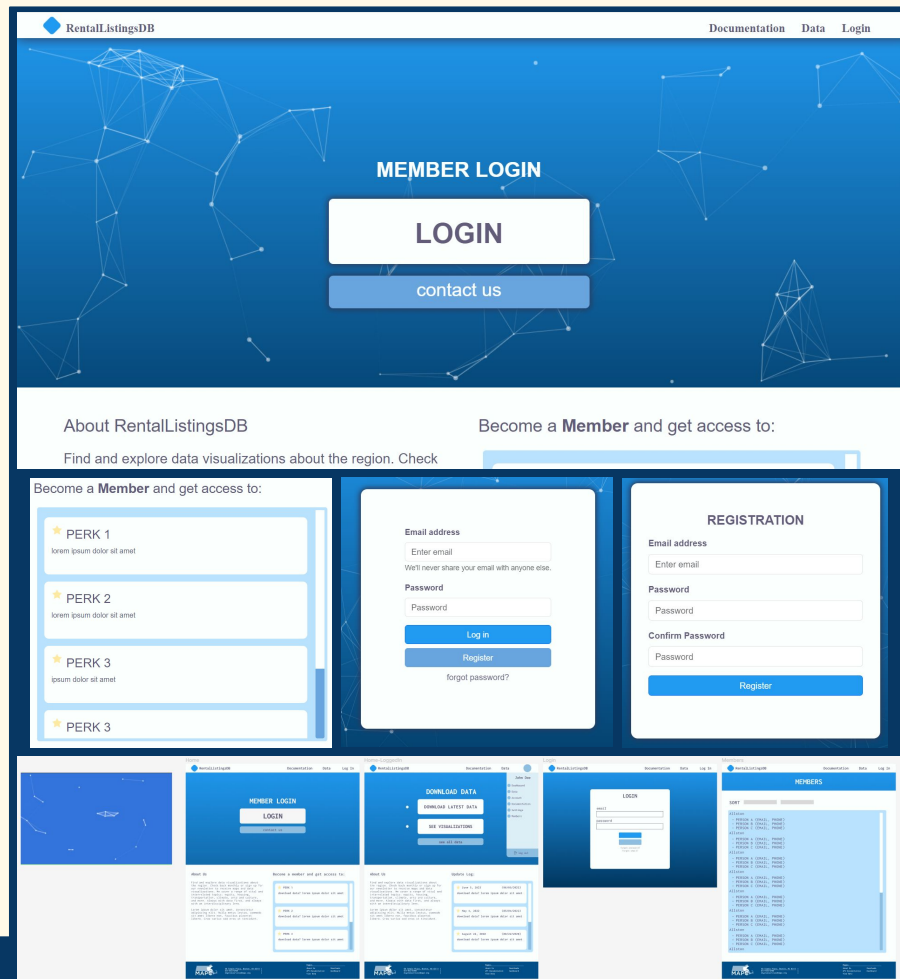
Explanation:
Quincy Market!

Close Submit



► RLDB Web Portal (Design + Build)

- Start codebase from scratch! Developing new development practices and infrastructure standards!
 - Built a template stack for JS server and frontend! (NextJS, PostgreSQL, Prisma, React, StyledComponents)
 - CircleCI for CI/CD deployment practices!
- Designed UI/UX mockup in Figma
- Implemented Frontend website
- Setup user account authentication with Browser Session data and Local postgres server integration





► Reflection

As part of this fellowship I was given the opportunity to explore several different platforms, tools, and practices I've never used, through the perspective of MAPC.

New Tools / Practices (!):

- Airtable
- Mapbox
- CircleCI
- Sass
- Esri
- SSH Deploy Workflow

Overall it was really eye opening getting to see the amount of hard work that gets put in behind the scenes!

Fast paced and great working/learning environment!



Q&A

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