

Tensor Hero Frontend

MIMS 2022 Capstone Final Presentation

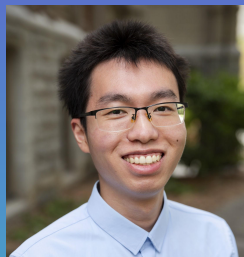


Team



Forrest Brandt

**User Research/
Frontend**



Junyi Cheng

**Software
Engineering**



Sam Stromberg

**User Research
Feature Roadmap**



Claire Zhu

**User Research
UI/UX Design**

Advisors: Coye Cheshire, Niloufar Salehi

Project Background

Preliminary Research

Design

Implementation

01

Project Background



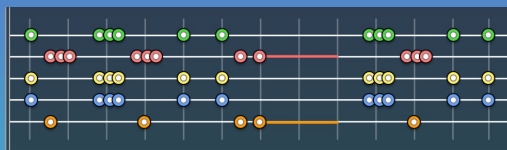
Project Background

1 Host Backend ML Algorithm

Audio File

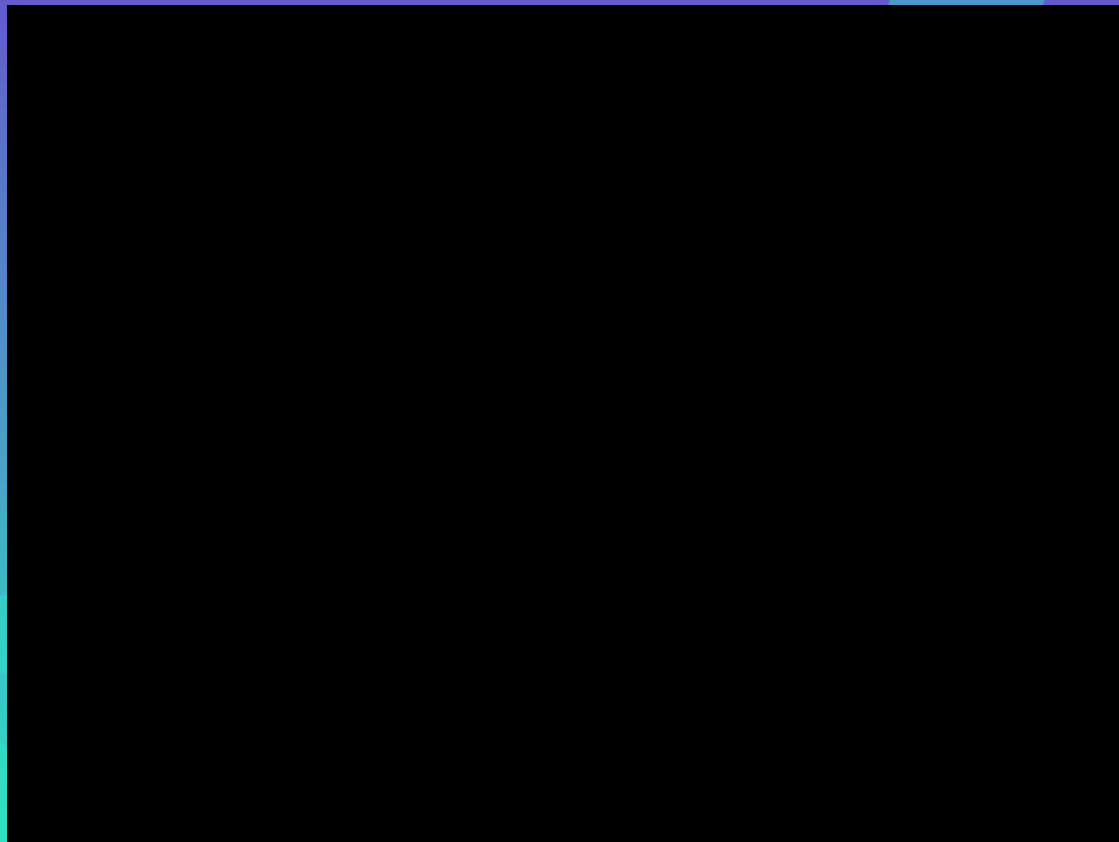


Chart

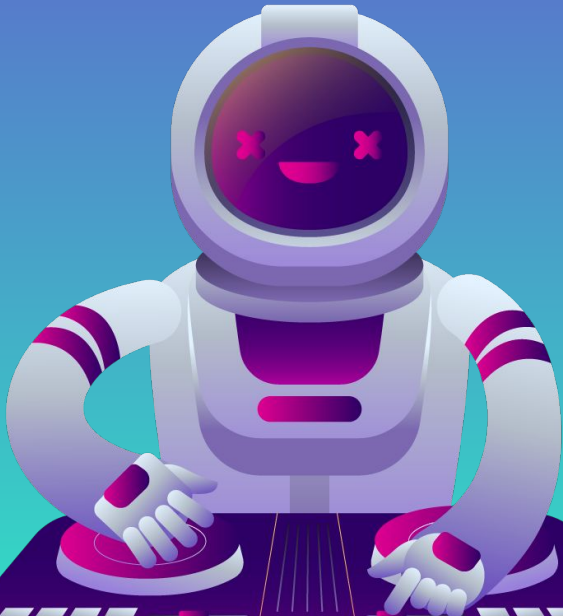


2 Support the Clone Hero Community, Not Disrupt It

Leverage Streaming Platforms to Grow the Community



Preliminaries

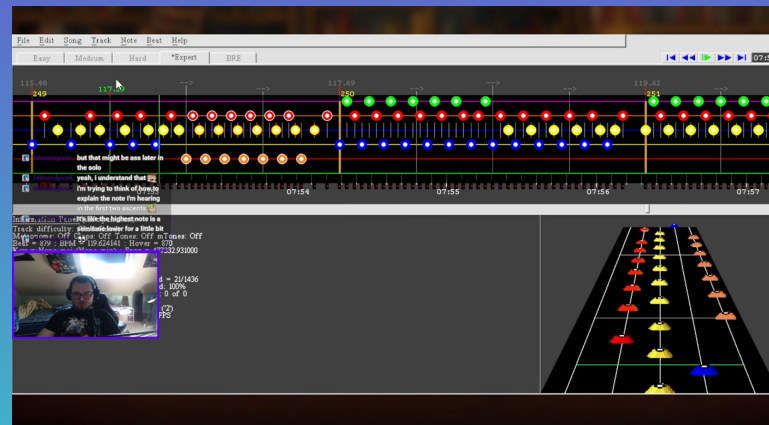


Generative Research

Desk Research & IDI Interviews

CH community is active, but decentralized

Most members are experienced players, and power users drive content creation



User Segments and Pain Points



Current Charters



New or Casual Players



Expert Players



Supporting lower difficulties

Making work findable



Knowing where to look for charts

Easing the skill learning curve



Getting new charts for favorite songs or original compositions

Discovering what's been charted before



Key Activities Supported

Creation

Retrieval

Onboarding



Launch Features

home generate CH level charts technical stuff

Create new chart

Publish / share chart

Explain machine learning workflow

Search library

Next Steps

Generate or adapt for all difficulty levels

User accounts and social interactions

Advanced sort, filter, and search

Chat editing and feedback

Curation and discovery

Recommendation engine



03

Design & Prototyping



Design Iterations

Generative Research

Paper Sketches

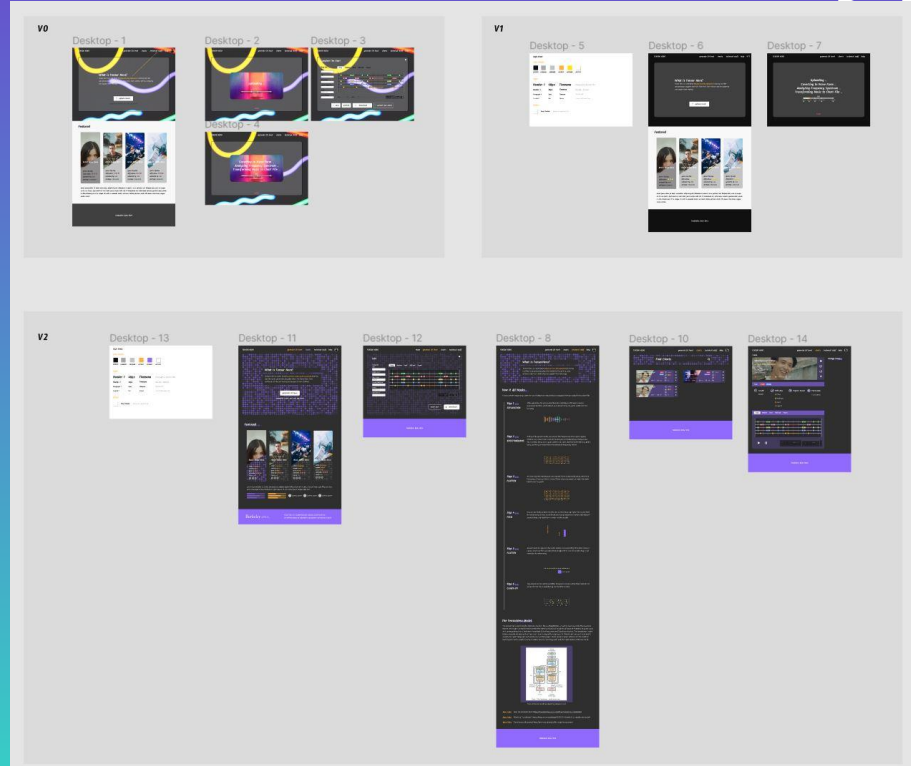
Low Fidelity Mockup

Design Sync With Backend

High Fidelity Prototype

Usability Testing

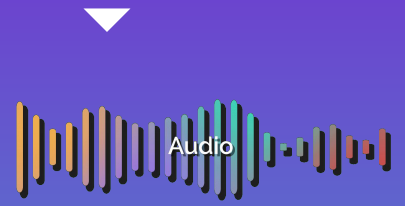
Implementation



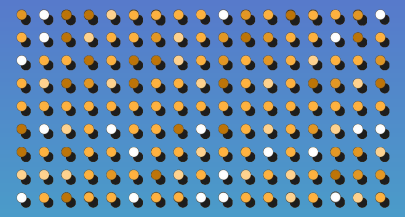


Design Decision I: ML Model Representation

Use visual representations to help users understand the **technical background** of Tensor Hero



Separation



Flatten

Transform



Spectrogram



Feed

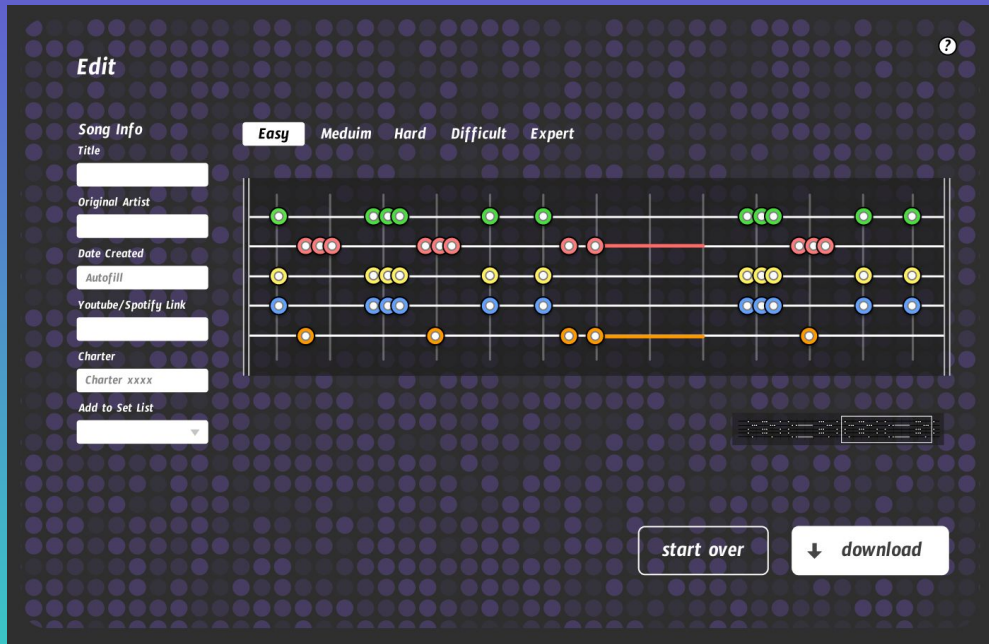


Chart-ify



Design Decision II: Real-time Chart Interactions

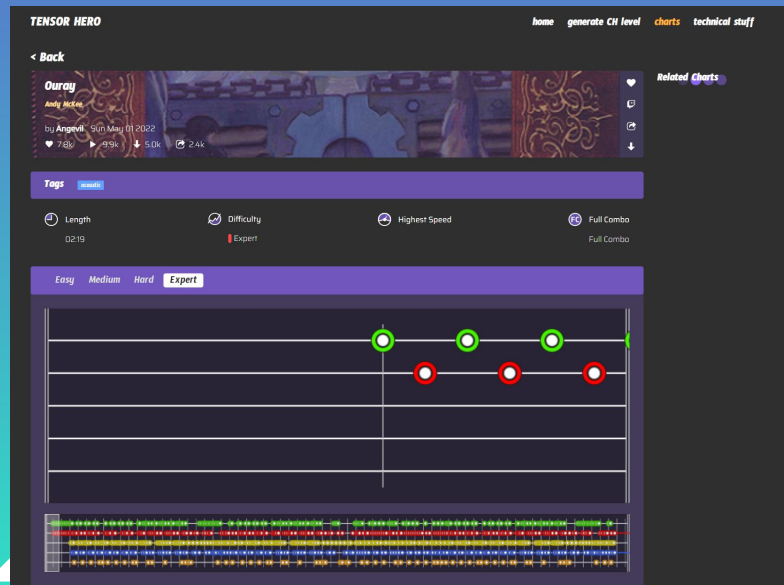
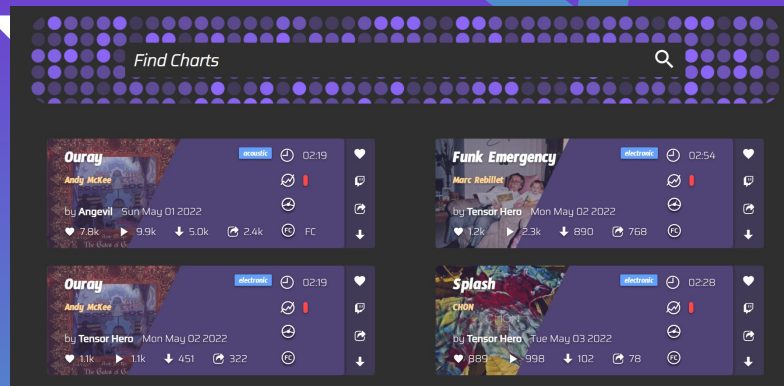
Synchronize chart visualizations with audio to mimic the Clone Hero interface and create a **realistic player experience**





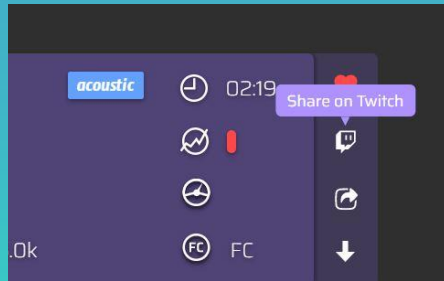
Design Decision III: One Place For All Charts

Provide a central chart hub as the chart database, as well as a means to encourage player & user interactions with one another

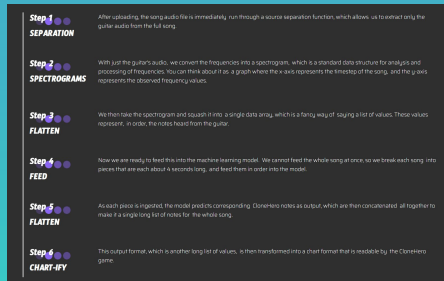


What We Changed Based On Usability Testing

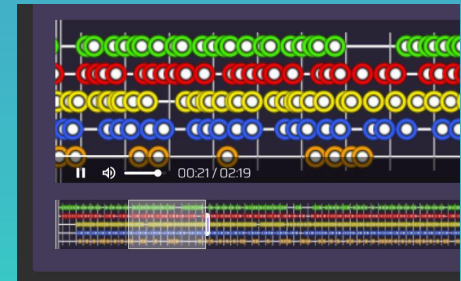
Tooltips for Icons & symbols



Further Clarify Technical Descriptions



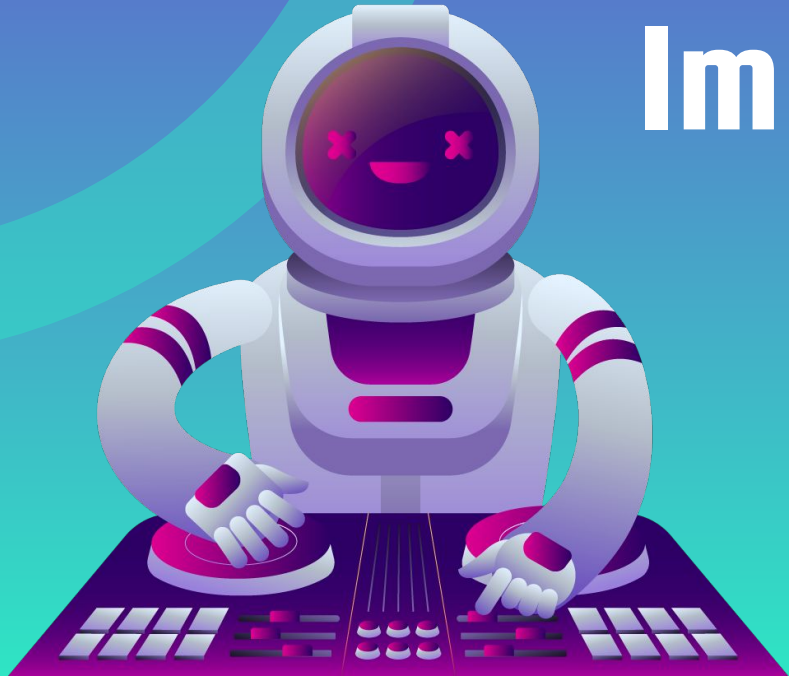
Implement Affordances to Optimize Chart Interactions



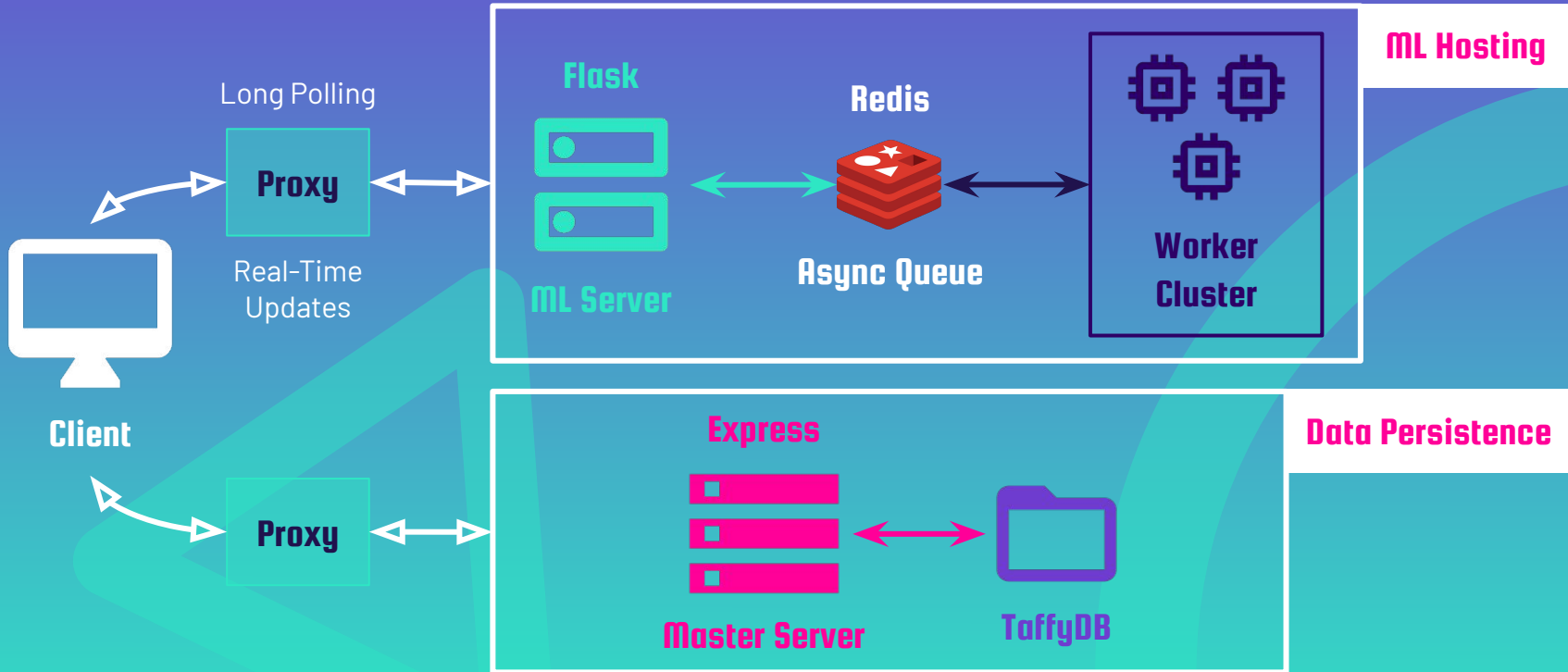


04

Implementation & Demo



System Architecture Unraveled



This Is An Open-Source Project

Search Pull requests Issues Marketplace Explore

rexcheng1997/tensorhero-frontend Public

Code Issues 1 Pull requests Actions Projects Wiki Security Insights Settings

Workflows [New workflow](#)

All workflows

pages-build-deployment

tensorhero-ci

Tell us how to make GitHub Actions work better for you with three quick questions. [Give feedback](#)

All workflows

Showing runs from all workflows

Filter workflow runs

82 workflow runs	Event	Status	Branch	Actor
tensorhero-ci tensorhero-ci #68: by rexcheng1997	master	1 hour ago 1m 18s		
pages build and deployment pages-build-deployment #25: by github-pages [bot]		1 hour ago 1m 34s		
tensorhero-ci tensorhero-ci #67: by rexcheng1997	master	2 hours ago 1m 20s		
pages build and deployment pages-build-deployment #24: by github-pages [bot]		2 hours ago 1m 27s		
tensorhero-ci tensorhero-ci #66: by rexcheng1997	master	3 hours ago 1m 43s		
pages build and deployment pages-build-deployment #23: by github-pages [bot]		3 hours ago 1m 12s		
tensorhero-ci tensorhero-ci #65: by rexcheng1997	master	6 hours ago 1m 19s		
pages build and deployment pages-build-deployment #22: by github-pages [bot]		6 hours ago 1m 8s		
tensorhero-ci tensorhero-ci #64: by rexcheng1997	master	8 hours ago 1m 30s		

lint-and-test
succeeded 44 minutes ago in 49s

Search logs

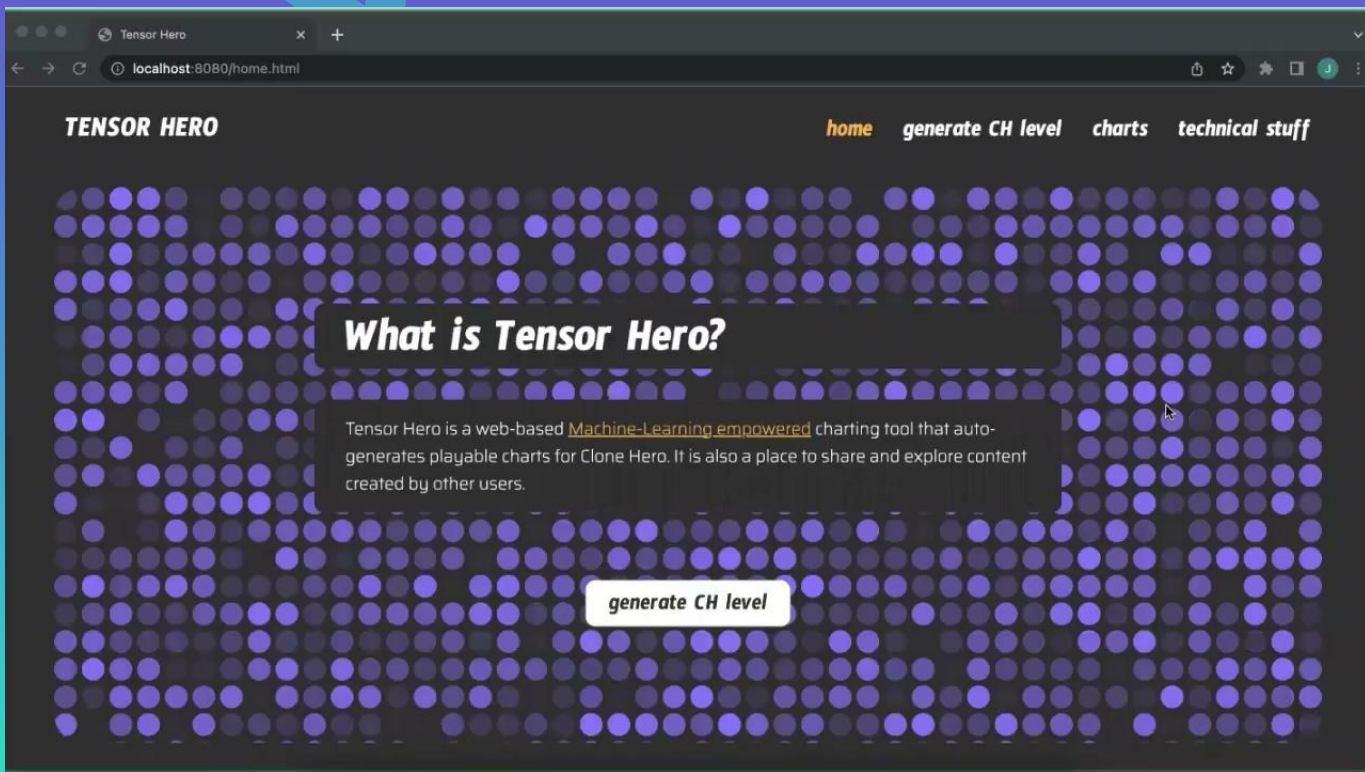
51	NavBar.tsx	100	100	100	100
52	components/Snackbar	100	100	100	100
53	index.tsx	100	100	100	100
54	components/Tooltip	100	100	100	100
55	index.tsx	100	100	100	100
56	components/VolumeControl	100	100	100	100
57	index.tsx	100	100	100	100
58	utils/TrieNode	100	100	100	100
59	index.ts	100	100	100	100
60	utils/chart-parser	100	100	100	100
61	chartParser.ts	100	100	100	100
62	index.ts	100	100	100	100
63	interface.ts	100	100	100	100
64	parserutils.ts	100	100	100	100
65	utils/chart-parser/__tests__/mockData	100	100	100	100
66	correctResults.ts	100	100	100	100
67	utils/chart-visualization	96.58	89.18	81.81	98.19
68	arithmetics.ts	100	100	100	100
69	chartVisualizationApp.ts	98.95	91.42	91.66	100
70	constants.ts	100	100	100	100
71	index.ts	100	100	100	100
72	notesSpriteLoader.ts	70	0	20	77.77
73	utils/chart-visualization/__tests__/mockData	100	100	100	100
74	chartObjects.ts	100	100	100	100
75	utils/formatting	100	100	100	100
76	formatBigNumber.ts	100	100	100	100
77	formatDate.ts	100	100	100	100
78	formatTimestamp.ts	100	100	100	100
79	index.ts	100	100	100	100
80	utils/jsonify	100	100	100	100
81	index.ts	100	100	100	100
82	utils/jsonify/__tests__/mockData	100	100	100	100
83	prettyPrintToHTML.ts	100	100	100	100
84	utils/url	100	100	100	100
85	index.ts	100	100	100	100
86	resolveToBase.ts	100	100	100	100
87					
88					
89	Text Suites: 20 passed, 20 total				
90	Tests: 1 skipped, 116 passed, 117 total				
91	Snapshots: 0 total				
92	Time: 17.868 s				
93	Ran all test suites.				

> Post Run actions/setup-node@v2 0s

> Post Run actions/checkout@v2 0s

> Complete job 0s

Demo



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THANKS!

▼

□

A stylized illustration of a person with long dark hair wearing a VR headset and a black t-shirt with a white bunny face. They are sitting at a dark keyboard. The background is a gradient of purple and blue with abstract shapes and symbols like a plus sign, a downward arrow, and a square. A dark cup with a straw is on the left.