

# Josh Zhang

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## Education

### Harvard University

Cambridge, MA

BA in Computer Science & Statistics || Secondary in Educational Studies || Chinese Citation

Expected May 2027

**Relevant Courses:** Sports Analytics, Planning and Learning Methods in AI, Advanced Data Science, Linear Modeling, Data Structures & Algorithms, Statistical Inference, Probability, Linear Algebra, Discrete Mathematics, Multivariable Calculus

## Skills

**Programming Languages:** Python, Swift, C++, R, Javascript, MATLAB, SQL, Scikit-Learn, Next.js, Tensorflow, Pytorch

**Additional Skills:** AWS Web Services, HuggingFace, Supabase, Firebase, OPIC Advanced Proficiency in Chinese, Blender, Fusion360, Solidworks, Photoshop, Premiere Pro, After Effects, Illustrator, Microsoft Office

## Experience

### Project CETI || *Research Associate*

Sep 2023 - Feb 2024

- Collaborated with Professor Daniel Vogt and Harvard graduate students to devise and develop various whale tag iterations aimed at enhancing tag resilience for monitoring whale health, activity, and environmental conditions

## Projects

### Decoding Winning Patterns in Professional Basketball via Attention-Based Sequence Models *Jul 2025-Present*

Accepted into the 2025 New England Symposium on Statistics in Sports (NESSIS)

- Developed transformer-based neural network models using player-level NBA data (2016–2025) to predict regular season and playoff win totals (Validation MAEs of 6.49 and 2.12), achieving performance competitive with modern forecasting models and providing a practical tool for evaluating roster impact and front office decisions

### Mass. Food Network || Hacking Injustice || Community Health Category || Grand First Place Winner

Mar 2025

- Engineered an algorithm leveraging OpenAI Vision API, Regex, OpenAI API, and Google Maps API to parse uploaded grocery list images and connect users with local vendors, optimizing affordability through balanced cost-distance, per-item pricing, and proximity-focused matching
- Constructed a Supabase database and developed an ergonomic front-end interface for local vendors to upload their business information and enable users to submit grocery lists that dynamically retrieve relevant items

### Arbitraider || Hacklytics

Feb 2025

- Utilized AWS SageMaker and S3 to deploy an algorithm that scraped real-time betting market data from Kalshi and Gamma APIs and used the OpenAI API to quantify market similarity and ensure successful arbitrage transactions
- Designed an intuitive interface to visualize market trends in real-time and implemented live query inference using the Grok API for dynamic insights

### Caption Capturer || Personal Project

Jan 2025

- Published a multi-language Chrome extension utilizing the Web Speech API, Chrome Extension APIs, and virtual audio mixers to provide real-time, accurate speech-to-text captions
- Implemented a robust extension framework, including multi-language selection, a timeout-based overlay management system for captions, and an intuitive user interface that allows toggling captions, language preferences, and alerts users if website security measures restrict functionality

### Monch || HackUTD || Pinata Platinum Sponsor Category || First Place Winner

Nov 2024

- Deployed a TensorFlow-based neural network leveraging the Food101 dataset to classify food items and identify ingredients, integrating USDA data to accurately predict macro-nutrient distribution
- Designed a front-end user interface enabling users to scan or upload meal photos and analyze progress through goal-oriented graphs

## Extracurriculars

### Datamatch || Web Developer

Oct 2024 - Present

- Spearheaded the design and deployment of Cupid, an OpenAI Assistants-powered chatbot with a custom pixel-art interface, engaging over 32,000 college students

### Harvard Radio Broadcasting (WHRB) || Sports Announcer

Sep 2024 - Present

- Provide live play-by-play commentary and in-depth analysis for Harvard basketball and football games, engaging listeners with dynamic coverage and real-time insights on radio station Cambridge 95.3 FM

### Asian American Association || Treasurer → Senior Representative

Jan 2023 - Present

- Foster community and engagement among upperclassmen in the Pan-Asian community through cultural, social, and professional events

### Harvard Sports Analytics Collective || Analyst

Oct 2022 - May 2023

- Analyzed sports data trends to write statistics-based articles and consult with various professional sports teams