

# Derek Zheng

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## EDUCATION

### Harvard University (Leave of Absence, Fall 2020)

*Aug. 2019 – Dec. 2023*

A.B., Computer Science and Economics

- Coursework: Data Structures & Algorithms, Systems Programming and Organization, Linear Algebra, Big Data.
- High School [Heisman National Finalist](#): Merit scholarship by the Heisman Foundation (10 selected), USACO Gold.
- Board Member of [Harvard Computer Society Tech for Social Good](#), [MakeHarvard](#), & [Harvard Effective Altruism](#).
- Research Assistant (Technology & Energy Transitions), Harvard Kennedy School; Associate, [Harvard CBE](#).

## TECHNICAL SKILLS

- C++, Java, Python, JavaScript/TypeScript, HTML/CSS, SQL
- GitHub, Systems, MacOS, VSCode, Full-Stack

## TECHNICAL EXPERIENCE

### R42 Institute ([r42group.com](https://r42group.com))

*Sep. 2020 – Present*

AI Research Fellow

- Research efficacy of applying machine learning and data science techniques in Python to analyze California water consumption data and forecast water demand and identify critical infrastructure leakages.

### MassEnergize ([massenergize.org](https://massenergize.org))

*Aug. 2020 – Present*

Software Engineering Intern

- Develop platform functions with React.js, Python & PostgreSQL to encourage climate action in MA communities.
- Architect Python data platform to aggregate and visualize solar, wind, and EV usage across 350+ municipalities.

### Pakira, Inc. ([forum.pakira.com](https://forum.pakira.com))

*Nov. 2019 – Present*

Founding Software Engineer

- Design and implement B2B physical commodities trading marketplace using TypeScript, React.js, PostgreSQL.
- Engineer core private chat feature, build and consume custom REST API routes, implement SQL queries, define database schemas in MongoDB using Node.js, Docker, fp-ts, TypeORM, Fastify, and Socket.io.
- Architect reCAPTCHA protection system and engineer production-level user validation program to protect core user information. Lead construction of dataset utilizing Python to analyze data from 250,000+ companies.

### Boston Housing Authority ([echosearch.org](https://echosearch.org))

*Mar. 2020 – June 2020*

Software Development Intern

- Develop an online housing search tool to support the housing search process for low-income Boston families, integrating research report analysis to make core design choices and develop new product features.
- Augment functionality by integrating three new API services, including Google Sheets API, extending search and map tool features in React.js, resulting in an expansion in listings by over 10,000 affordable properties.

## OTHER EXPERIENCE

### Clearvision Ventures ([clearvisionventures.com](https://clearvisionventures.com))

*Aug. 2020 – Present*

Analyst Intern

- Evaluate the application of artificial intelligence to sustainable initiatives, scouting investment opportunities and collaborating with portfolio companies to synthesize actionable recommendations and insights.

### Joy Food Company ([getjoyfood.com](https://getjoyfood.com))

*Jun. 2020 – Aug. 2020*

Product Intern

- Spearhead redesign of online customer onboard experience powered by Shopify & Stripe. Coordinate with developers and UI experts to utilize UX and design principles to construct wireframes and prototypes in Figma.

## PROJECTS

- *WeensyOS*, an operating system design project employing memory isolation & allocation, forking & exiting processes, systems calls, and kernel privilege built on Linux x86-64 architecture, written in C++.
- *Monta Vista Official*, an official school iOS App with 600+ downloads, utilizing Google Calendar API.