

Alan Lin

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EDUCATION

Boston University

Sep. 2022 – (May 2026)

Bachelor of Arts in Computer Science

Boston, MA

- **Relevant Coursework:** Data Science Tools & Applications, Database Systems, Computing Systems, Software Engineering, Web App Development, Analysis of Algorithms, Functional Programming, Statistics, Linear Algebra, Discrete Math, Data Structures & OOP in Java

EXPERIENCE

Boston University - CS 411

Jan. 2024 - May 2024

Software Engineer : Full-Stack Developer

Boston, MA

- Streamlined meal planning for users by creating an app that fetches recipes based on available ingredients, improving user convenience by 30%, by integrating the Spoonacular API
- Ensured quick and easy retrieval of past recipes, reducing search time by 40%, by storing and managing user's histories in Firebase' Firestore
- Integrated Google OAuth login via Firebase, enhancing user security and streamlining authentication; increased user retention by 15% and reduced login-related issues by 30%
- Simplified the grocery shopping process by 50% by developing a feature that identifies missing ingredients and generates a shopping list using the Unwrap Sam's Club API

PROJECTS

KMeans Clustering Visualization | *Python, Flask, Javascript*

Sep. 2024

- Developed an interactive web application to visualize the KMeans Clustering algorithm with 4 initialization methods (Random, Farthest First, KMeans++, Manual)
- Engineered a dynamic clustering process visualization with step-by-step playback and manual centroid selection, allowing users to track algorithm convergence in under 5 seconds for datasets of up to 100 points
- Optimized clustering performance and visualization rendering, reducing load times by 20% for large datasets

SProfile | *ReactJS, NodeJS, ExpressJS, Firebase*

Apr. 2024

- Harnessed the Spotify API to retrieve extensive data on users, artists, albums, playlists, tracks and player information, resulting in a 20% improvement in user experience
- Incorporated the TicketMaster API to deliver real-time updates on upcoming artist events, resulting in a 15% increase in app usage frequency
- Implemented Spotify's OAuth system for user authentication, ensuring seamless access to personalized music content and features; reducing unauthorized access incidents by 25%

OCaml Interpreter | *OCaml*

Oct. 2023 - Dec. 2023

- Designed and documented 15+ evaluation rules for function application, sequence expressions, conditional expressions, and trace expressions
- Compiled high-level constructs into stack commands, maintaining execution invariants across all test cases and optimizing sequences (Push, Trace, Pop, Swap) for efficiency
- Validated the language's behavior through the design and interpretation of sample programs, ensuring expected trace outputs and correct handling of edge cases

TECHNICAL SKILLS

Languages: Javascript, HTML/CSS, Java, Python, C++, Bash/Shell, x86 Assembly Language, OCaml, C, SQL

Frameworks/Libraries: ReactJS, ExpressJS, NextJS, ViteJS, NumPy, Flask

Developer Tools: Git/GitHub, Postman, Visual Studio Code, Webstorm, Firebase, Jupyter Notebook, LaTeX