

# Wanchen Hong

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## SUMMARY

Seeking a software engineer position starting January 2025.

Solid Computer Science and Statistics student with strong programming, analytical and mathematical skills. Has 3 years of project experience in various areas, including full-stack web application development, recommendation systems and machine learning models using **Java**, **Python**, **PostgreSQL**, **Javascript** and **TypeScript**, hands on experience with **Next.js**, **React**, **AWS** and **Node.js**.

## EDUCATION

**Boston University** *Boston, MA*

Expected Jan 2025

B.A in **Computer Science** and Physics; B.A./M.A. in Mathematics and Statistics

GPA: 3.86/4.0

Coursework: Data Structure, Probability, Algorithms, Machine Learning, Deep Learning, Database, Computing Systems

## EXPERIENCE

### Wave Dynamics

*Nashville, TN*

Software Engineer Intern

*July 2024 - Current*

- Developed and managed a high-performance, full-stack ticketing platform using **Next.js**, **Node.js**, and **Tailwind CSS**, delivering an optimized user experience.
- Integrated **Stripe API** for secure and seamless payment processing, driving over \$120,000 in monthly ticket sales.
- Implemented a targeted email marketing system using **Resend**, enabling certified collaborators to send custom marketing emails to specific users, increasing total user count by more than **100%**.
- Utilized **Firebase** for scalable and efficient data storage, coupled with **Google authentication** to ensure secure and streamlined user access.

## PROJECTS

### Postare: A Visual Discovery Engine to Share and Discover Ideas

- Designed and developed a full-stack web application, enabling users to browse, save, and organize image posts in a secure environment.
- Engineered an intuitive and user-friendly client interface using **Next.js** and **Chakra UI** for an engaging user experience.
- Implemented **Java** controllers with **RESTful APIs** to effectively handle HTTP requests and responses, combined with a **Go** microservice for data handling and management.
- Utilized **PostgreSQL** for robust data storage and integrated **AWS RDS** to enhance simplicity and scalability.
- Facilitated user convenience using **Spring Boot** with features like login, logout, likes, and comments, leveraged **Spring Security** with **token-based OAuth2** to ensure user security.
- Successfully containerized the application with **AWS ECR** and deployed it on **AWS EC2** for improved reliability and scalability.

### Echo Tune: A Spotify-like Music Player

- Designed a **Kotlin** based music player app by leveraging **Android Jetpack Library** and **Hilt Dependency Injection**.
- Implemented seamless App Navigation and BottomBar in the app using the **Jetpack Navigation component**.
- Created a mock **Restful API** json server and integrated **Retrofit** to handle network requests.
- Built a user-centric interface with feed, album and favorite in **Jetpack Compose** following MVVM architecture.
- Enhanced user experience by enabling a local caching feature for favorites using **Room Database**.
- Integrated the **Google Exoplayer** to provide a robust global music playback experience.

### Semantic Analysis for Youtube User Comments

- Developed a **Spark**-based machine learning algorithm to categorize users according to their Youtube video comments.
- Built a data processing pipeline based on Spark RDD, Dataframe, and Spark SQL for big data OLAP.
- Cleaned and processed user comments via RegexTokenizer and Word2Vec in **SparkML**.
- Tuned hyperparameters of **Logistic Regression** and **Random Forest** algorithms via k-fold cross-validation.
- Applied the TF-IDF methodology for feature extraction and implemented an unsupervised Latent Dirichlet Allocation (**LDA**) model to identify the top 5 topics among the target user group.

## SKILLS

**Programming Languages:** Python, Javascript, Typescript, Java, Go, R, C, HTML, CSS

**Databases and Big Data Tools:** PostgreSQL, MySQL, Spark, Hadoop, MapReduce

**Frameworks and Platforms:** Next.js, React, ChakraUI, ant Design, Node.js, Git, Firebase, Pytorch, Tensorflow