

# ZHIYUAN (ALLEN) SONG

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**Current Address:**  
429 Monroe Lane,  
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## EDUCATION

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**University of Virginia, Charlottesville, VA**

**B.A. in Computer Science and B.A in Applied Statistics**

*Expected December 2024*

- Overall GPA: 3.89/4.00 | CS Major GPA: 3.96/4.00.
- Coursework: Machine Learning, Cybersecurity, Software Dev Essentials, Data Structures and Algorithm, Computer System and Organization, Discrete Math and Theory, Regression Analysis, and Data Visual and Management.
- Teaching assistant: CS2120 - Discrete Math and Theory.

## SKILLS & INTERESTS

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- Skills: React-Native, React, Node.js, MySQL, Swift, Python, Java, JavaScript, C, R, HTML, CSS, Photoshop, Final Cut Pro X.
- Languages: Native in Chinese, fluent in English.
- Interests: Film-editing, Photography, Basketball, and Hip-hop, Fashion.

## PROFESSIONAL EXPERIENCE

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**Xenophobia in Large Language Model, University of Virginia Biocomplexity Department, Charlottesville, VA**

*Research Assistant with Prof. Madhav Marathe*

*August 2023 - Present*

- Developed a keyword extraction algorithm deploying Latent Dirichlet Allocation (LDA) and the Natural Language Toolkit (NLTK), boosting work efficiency by up to 90%.
- Automated generation of 300 test personas via a Python script utilizing the OpenAI API and implemented a scalable execution approach on Rivanna leveraging sbatch files, allowing simultaneous runs.

**Explaining Clusters of Energy Usage Data, University of Virginia Biocomplexity Department, Charlottesville, VA**

*Research Assistant with Prof. S. S. Ravi*

*February 2024 - Present*

- Enhanced a cluster descriptor Python script with the Gurobi optimization package, improving result accuracy by refining 5 constraints implementations.
- Initiated DBSCAN clustering for energy usage data, aiming to compare performance of traditional K-means clustering methods.

**Spread of Health Opportunity Index, University of Virginia Department of Computer Science, Charlottesville, VA**

*Research Assistant with Prof. Rich Nguyen*

*February 2024 - Present*

- Trained and evaluated 10 Random Forest models to predict the Health Opportunity Index across 50 states, achieving over 85% accuracy on testing datasets.
- Designed a Threshold-Based Policy Making Framework using machine learning insights to aid policymakers in resource prioritization.

**University of Virginia, Charlottesville, VA**

*Teaching Assistant for Discrete Math and Theory*

*August 2022 - January 2023*

- Conducted weekly office hours and taught discrete math concepts to approximately 50 students, enhancing understanding and performance.
- Collaborated closely with faculty, participating in weekly meetings and grading tasks for 77 students.

## PROJECT INVOLVEMENT

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**Fit Lab IOS Application, Ningbo, China**

*Co-founder and Software Engineer*

*May 2023 - Present*

- Led development of application's front-end in Swift using Xcode, focusing on user profile and map functionality.
- Adopted to the Spring Boot Java back-end and coordinated team meetings and managed application launch timeline.

**FreshmanAI, One Dream International Trade Co., Ltd, Beijing, China**

*Software Engineer*

*December 2023 - Present*

- Engineered a full-stack solution with React-Native and Node.js, leveraging Ali Yun Server and MySQL for backend services.
- Implemented an email verification feature using Google API and designed corresponding HTML page for user verification.