

Alan Rodriguez

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EDUCATION

San Francisco State University

Present - May 2026

Masters of Science in Statistical Data Science

San Jose State University

Dec 2021

Bachelor of Science in Computer Science

Relevant Coursework: Computer Networks, Data Structures, Algorithms, Programming Paradigms, Formal Languages and Computability, Server Web Programming, Operating Systems, Compiler Design, Software Engineering, Information Security, and Advanced C++ Programming

Certifications: JPMorgan & Chase Co. Software Experience

[Link to Certification](#)

Jan 2022

HIGHLIGHTED PROJECTS

Design and Analysis of Experiments (Math 747)

2024

- Utilized [R](#) to conduct hypothesis testing and develop experimental designs.
- Analyzed complex datasets to evaluate the impact of different variables using ANOVA, factorial designs, and response surface methodology.

Zodiac Dating App

2024

- Spearheaded a dating app for the AppStore using [Swift](#), [SwiftUI](#), and [Storyboard](#) to create an intuitive and engaging user interface.
- Leveraged [CocoaPods](#) and Google's [Firebase](#) to securely store user information and authenticate user logins.
- Orchestrated the app's full-cycle UX/UI development, from initial prototyping in [Figma](#) to the implementation of responsive interfaces using [SwiftUI](#) and [UIKit](#).
- Developed innovative matching algorithms using horoscope data.

Declarative Paradigm Interpreter

2021

- Implemented a [Prolog](#) interpreter using [Java](#) and [ANTLR](#), a language recognition software.
- Designed and implemented efficient data structures and algorithms for a variety of commands such as `make_set`, `delete`, `insert_subset`, `equals`, `difference`, `union`, `append`, `nth`, and `flatten`.
- Optimized parsing algorithms to search and look-up relationships of the facts from a linear runtime to constant runtime.

Multithreaded Program | [Link to Code](#)

2021

- Formulated a multithreaded program in [C](#) to create and manipulate a linked list of strings.
- Ensured thread safety using mutexes to handle concurrent data access and updates.
- Efficiently managed memory and performed critical section operations to avoid data corruption.
- Successfully designed and executed algorithms to maintain the linked list in lexicographic order.

C++ Video Game Development | [Link to Code](#)

2019

- Collaborated with a team of four students to design and implement a 2D adventure-based game using [C++](#) and [SFML](#) libraries, crafting an engaging graphical user interface.
- Enhanced the graphical user interface and implemented a robust collision detection system to ensure seamless player-environment interaction.
- Optimized map storage and efficiency by 47.75% through dynamically allocating and deallocating aspects of a map's coordinates according to the current location of the player relative to the map.

EXPERIENCE

Instructor | Hayward Unified School District

Mar 2023 - Present

- Adapted instructional strategies to support a diverse student body, aligning with the district's goals for equity and inclusion.
- Designed and delivered lesson plans that enhanced understanding through clear and effective communication.

Computer Science Tutor | Chabot College, MESA

Jan 2019 - May 2019

- Instructed 163 low socio-economic students through courses in data structures, computer architecture, and object-oriented programming.
- Reallocated resources to technology initiatives, yielding a substantial 46.3% increase in student engagement.

SKILLS

Technical Skills: Python, C#, C, C++, Java, React, Node.js, JavaScript, .NET, HTML, PHP, MySQL, Git, Docker, Kubernetes, Django, Flask, SpringBoot, jQuery, CSS, SQL, GraphQL, Jenkins, Confluence, BitBucket, Gitt, Mercury, Linux, Windows, and AWS

Soft Skills: Team Player, Dependable, Creative, Adaptable, Excited to Learn, Effective Communication Skills