

Ryan Sierra

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EDUCATION

Purdue University

West Lafayette, IN

B.S. in Computer Science

Expected May 2028

- **Concentrations:** Software Engineering & Machine Intelligence
- **Coursework:** Data Structures & Algorithms, Computer Architecture, Object-Oriented Programming in Java, Programming in C, Foundations of Computer Science, CS Tools (Git)

RESEARCH EXPERIENCE

GeoML Environmental Prediction Research

West Lafayette, IN

Research Assistant

Sep 2024 – Jan 2025

- Collaborated on project leveraging NASA satellite data to predict global pollutant concentrations in underserved areas using Python, Pandas, NumPy, Matplotlib, and TensorFlow. Integrated ground-based monitoring data, implemented MLflow visualizations, and developed error detection scripts that improved model accuracy.

INVOLVEMENT

Purdue CS Undergraduate Student Board

West Lafayette, IN

CS193 Lead Instructor, Mental Health Initiative Lead, Research Resources Initiative

Feb 2025 – Present

- Selected from a 5% acceptance rate into Purdue's premier CS organization, focused on improving the student experience through community-driven initiatives. Teach CS193 (a CS tools course) to 700+ first-year students while leading mental health initiatives and expanding research access to undergraduate students.

Launchpad Purdue

West Lafayette, IN

Mentor, Member

March 2025 – Present

- Provide semester-long mentorship for first-year CS students, guiding them through their first full-stack project and hosting events to build community and technical skills throughout the semester.

Purdue Bands And Orchestras

West Lafayette, IN

Wind Ensemble Principal Horn, Boiler Brass Member

August 2024 – Present

- Principal Horn for 3 consecutive semesters and selected for performances at the Kennedy Center and in Spain. Recipient of \$6,500 in scholarship including the Leath Scholarship, David Foertsch Memorial Brass Award, and Boiler Brass "Outstanding Audition" Award.

PROJECTS

Twitch Weekly Recap Website

React, Node.js, Tailwind CSS, REST API, Twitch OAuth

Full-Stack Web Development

- Built personalized Twitch streamer recap platform with automated API data collection, OAuth authentication, interactive dashboards, and curated playlists using JavaScript, Tailwind, and modern web frameworks for comprehensive VOD and clip aggregation.

French Horn Practice Website

React, Node.js, Tailwind CSS, REST API, MongoDB

Full-Stack Web Development

- Developed 33-day orchestral audition prep and practice platform with integrated sheet music, excerpt audio playback, and progress tracking using Tailwind, MongoDB, and modern web frameworks for structured practice workflows.

Formula 1 2025 Race Result Prediction Model

Python, Scikit-learn, Random Forest, Pandas, Data Analysis

Machine Learning

- Created ML model predicting F1 race results using Python, Pandas, SKLearn, Random Forest regression, and the OpenF1 API, achieving accuracy within 3 positions using historical lap time and performance pattern analysis.

WORK EXPERIENCE

Fogo de Chão Brazilian Steakhouse

Irving, TX

Host, Employee

May 2025 – August 2025

- Greeted and seated guests in a fast-paced fine dining environment while managing reservations, wait lists, and inquiries, ensuring smooth front-of-house operations and a positive first impression.