

Juan de la Cruz

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PROGRAMMING

Daily use:

Python • R • C++

Regular use:

JavaScript • HTML \ CSS

Occasional use:

Matlab • SQL

Tools & Utilities

Git • Excel • Tableau Desktop

LaTeX • bash • JSON

EDUCATION

UNIVERSITY OF THE OZARKS

Clarksville, AR

Expected graduation date: Dec, 2021

Major(s): Mathematics & Chemistry

Minor(s): Computer Science & Economics

COURSEWORK

UNDERGRADUATE

Mathematics and Programming

Calculus II & III

Advanced Calculus

Probability and Statistics

Linear Algebra

Discrete Mathematics

Abstract Algebra

Data Structures and Algorithms

Chemistry

General Chemistry I & II

Quantitative Chemical Analysis

Physical Chemistry

Organic Chemistry

General Physics

RESEARCH INTERESTS

Computational Chemistry • Numerical

Analysis • Computational Biology • AI

• Bioinformatics • Fluid Mechanics

OTHERS

LANGUAGES

English (Advanced) • Spanish (Native)

EXPERIENCE

UNIVERSITY OF THE OZARKS | DATA ANALYST AND HEALTH INFORMANT

August 2020 – Present | Clarksville, AR

- Created new, experimental frameworks to collect data from Salesforce CRM environment
- Built tools for automated collection to create data visualizations and dashboards for the university's business unit, marketing department, and institution research.

JONES LEARNING CENTER | ACADEMIC TUTOR - SCC-TRIO PROGRAM

August 2018 – May 2020 | Clarksville, AR

- Enhanced student learning by optimizing a wide range of instructional approaches and innovative classroom activities.
- Supported 8 students to improve academic achievements in Calculus III, Discrete Mathematics, and General Chemistry I.

RESEARCH

ADVANCED MATERIALS RESEARCH CENTER | RESEARCH INTERN | POSTER

Jun 2019- Jul 2019 | Chihuahua, Mexico

- Research performed during the 15th Summer Research Program at CIMAV in the Computational Crystallography lab.
- Introduced an automatic-fitting option for various parameters in a 2D X-ray diffraction novel software package (ANAELU) through genetic algorithms.

PROJECTS

COVID-19 DASHBOARD | WEBSITE, ARTICLE

- Prepared data dashboards and other visualizations to support decision-making for COVID surveillance, outbreak and response activities at the university.
- Performed Python data analysis, data mining, and metric analysis.

FLOWCHECKED | WEBSITE, GITHUB

- Implemented Navier-Stoke equation to build 2D airflow simulation and model the spread of airborne viruses in indoor spaces.
- Applied the finite difference method to solve the NS equation in various layouts.

PINK CODE | WEBSITE, GITHUB

- Created a convolutional neural network to classify mass lesions as either benign or malignant with a 93 % of accuracy.
- Applied Image enhancement operations like contrast, color-balance, and sharpening to get meaning full data from the mammography scans.

AWARDS AND SCHOLARSHIPS

2020	1 st	CdeCMx Challenge: Health and environmental impact
2020	3 rd	COVID-19 Data Challenge: Navigating life and work in border communities
2019	1 st	Arkansas Undergraduate Mathematics Competition
2019	2 nd	Annual Arkansas Phi Beta Lambda Competition: Statistical Analysis
2019	2 nd	Integration bee competitions MAA OK-AR Section
2019	2 nd	Math Jeopardy competition MAA OK-AR Section
2019	3 rd	A.R.C.H. Symposium Oral Presentation
2018	1 st	Walton International Scholarship: Full ride scholarship